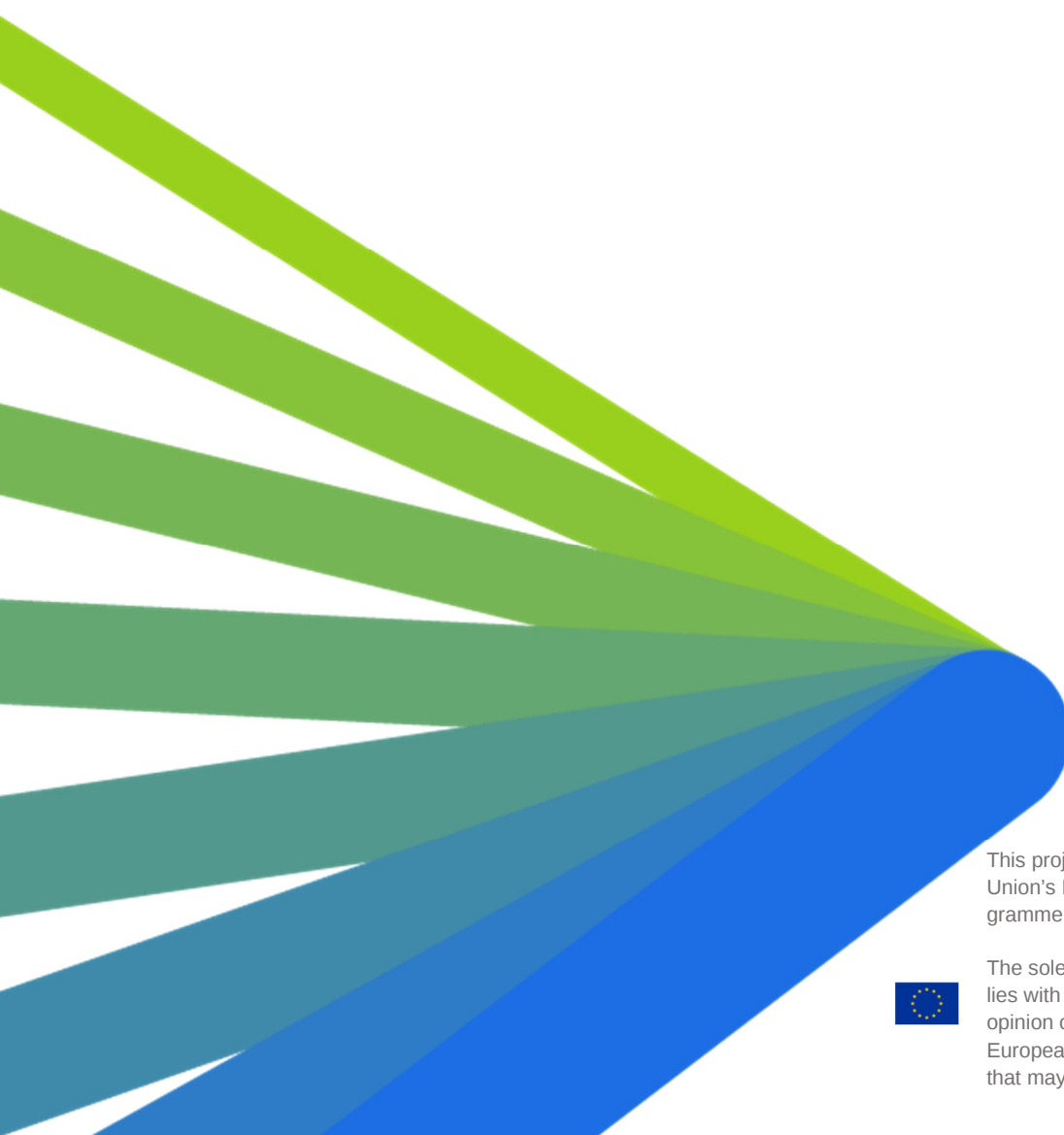




Deliverable 4.2

**Synergies between European, national
and regional programmes**

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List of abbreviations and acronyms

Acronym	Meaning
2Zero	Towards Zero Emissions (co-programmed partnership)
ADAS	Advanced Driver Assistance Systems
AV	Autonomous Vehicle
CCAM	Connected, Cooperative and Automated Mobility
CEDR	Conference of European Directors of Roads
CINEA	European Climate, Infrastructure and Environment Executive Agency
CSA	Coordination and Support Action
DoA	Description of Action (STREnGth_M Grant Agreement)
EC	European Commission
EDIH	European Digital Innovation Hubs
EMDS	European Mobility Data Space
ERTRAC	European Road Transport Research Advisory Council
EU	European Union
EV	Electric Vehicle
HDV	Heavy Duty Vehicle
LCA	Life-Cycle Assessment

Acronym	Meaning
MaaS	Mobility as a Service
R&I	Research and Innovation
RTR	Road Transport Research
SDGs	Sustainable Development Goals
SRIA	Strategic Research and Innovation Agenda
UN	United Nations
V2X	Vehicle-to-Everything

Executive Summary

Deliverable D4.2, “Synergies between European, national and regional programmes”, examines how European research and innovation (R&I) activities in road and land transport connect with development cooperation, climate finance, and implementation programmes at EU, national, and sub-national levels. Developed within Work Package 4 of the STREnGth_M project, the report responds to a growing need to bridge the gap between research, policy, and real-world deployment in the context of global sustainable mobility transitions. The analysis situates European road transport R&I within a complex and multi-actor cooperation landscape that includes EU external action instruments, Member State bilateral programmes, development banks, academic cooperation schemes, and city-level initiatives in partner regions. While Europe commands a dense and well-resourced ecosystem of funding instruments — ranging from Horizon Europe and its partnerships to NDICI–Global Europe, Global Gateway, and numerous national development agencies — these instruments often operate in parallel rather than as an integrated system. As a result, promising research outcomes and pilot innovations frequently struggle to transition into large-scale implementation and sustained impact.

The report maps key EU-level and Member State programmes relevant to sustainable road and land transport, with particular attention to climate mitigation, resilience, inclusivity, and institutional capacity building. It highlights how development cooperation increasingly recognises transport as a critical enabler of economic development, social inclusion, and climate action, even when transport is not an explicit sectoral focus. The analysis further explores how academic collaboration and research partnerships act as important catalysts for innovation, skills development, and policy learning across regions.

Building on this mapping, the report examines synergies and misalignments between research-oriented programmes and implementation-oriented development and infrastructure initiatives. It identifies persistent bottlenecks, including fragmented programming cycles, limited handover mechanisms between pilot projects and investment pipelines, and insufficient coordination across governance levels. At the same time, it points to emerging opportunities, such as the Team Europe approach, blended finance instruments, living lab models, and joint programming frameworks that can better align research, policy, and investment.

Looking ahead to the period 2025–2030, the report outlines potential pathways for strengthening a more coherent and reinforcing architecture for sustainable, inclusive, and low-carbon transport. By advancing a “one-system” perspective that connects research, finance, policy, and implementation, Deliverable D4.2 provides strategic insights to support European and international actors in maximising the global impact of road transport research and innovation.

1 Introduction

1.1 STREnGth_M project overview

STREnGth_M (Stimulating road Transport Research in Europe and around the Globe for sustainable Mobility) is a Horizon Europe Coordination and Support Action that contributes to the strategic planning and international alignment of road transport research and innovation (R&I). The project supports European and global efforts to accelerate the transition towards sustainable, inclusive, and climate-resilient mobility systems by strengthening cooperation between European, national, regional, and international actors.

Building on Europe's leadership in sustainable road transport research, STREnGth_M aims to:

- Identify future research and innovation needs in road transport;
- Support the coordination and alignment of strategic research agendas and roadmaps at European, national, and international levels; and
- Facilitate continuous exchange between Horizon Europe partnerships, technology platforms, policy actors, and global stakeholders.

A key dimension of STREnGth_M is its global outlook. The project tracks international progress in sustainable and electric mobility, with particular attention to emerging and developing regions in Africa, Asia, and Latin America. By analysing policy frameworks, funding instruments, and implementation practices beyond Europe, STREnGth_M seeks to strengthen synergies between European research activities and international deployment programmes, while supporting mutual learning and capacity building.

1.2 STREnGth_M WP4, task description and objectives of this report

This deliverable forms part of **Work Package 4 (WP4) “Global progress and international exchange”**, which focuses on strengthening links between European road transport research and global implementation, cooperation, and capacity-building efforts. WP4 addresses the growing need to align European R&I priorities with international development, climate, and infrastructure programmes in order to maximise impact and avoid fragmentation.

Within WP4, Deliverable **D4.2 “Synergies between European, national and regional programmes”** specifically aims to:

- Map and analyse major European, national, and regional programmes relevant to sustainable road and land transport in an international cooperation and development context;
- Identify existing and potential synergies between research-oriented programmes (e.g. Horizon Europe) and implementation-oriented development and infrastructure initiatives;

- Examine how funding instruments, policy frameworks, and institutional arrangements interact across governance levels and regions; and
- Highlight opportunities, bottlenecks, and strategic pathways for strengthening alignment between research, innovation, and deployment of sustainable transport solutions globally.

The report builds on desktop research, programme analysis, and insights from practitioner exchanges and task force workshops conducted within STREnGth_M. Its primary focus is on road and land-based transport (excluding aviation and maritime transport), with an emphasis on climate mitigation, resilience, inclusivity, and system-level transformation.

By providing an integrated overview of cooperation landscapes and funding architectures, this deliverable supports WP4's broader objective of enhancing international exchange and enabling European research outcomes to contribute more effectively to real-world transport transitions in partner regions.

1.3 Report structure

Following this introduction, **Chapter 2** outlines the overall approach, scope, and methodology applied in the preparation of this report, including the analytical perspective used to identify synergies across programmes and governance levels.

Chapter 3 provides a structured overview of key EU-level and EU Member State programmes relevant to global development cooperation, innovation, and sustainable transport, highlighting their objectives, instruments, and geographic focus.

Chapter 4 explores synergies between research and implementation programmes, examining how European R&I activities connect (or fail to connect) with development and infrastructure initiatives on the ground.

Chapter 5 adopts a system-level perspective to analyse interactions between EU, national, and sub-national actors, assess impact pathways and bottlenecks, and identify future opportunities and scenarios for the period up to 2030. The report concludes with strategic recommendations aimed at strengthening a coherent and reinforcing architecture for inclusive, low-carbon transport transitions.

2 Approach, scope and methodology

The approach adopted for this deliverable is designed to capture the complexity of multi-level cooperation between research, policy, finance, and implementation actors involved in sustainable transport transitions at global scale. Rather than focusing on individual projects, the analysis emphasises **programmes, funding instruments, and institutional frameworks**, and how these interact across European, national, and regional levels.

The methodological approach combines qualitative programme mapping with analytical synthesis, drawing connections between research agendas, development cooperation priorities, and on-the-ground implementation dynamics.

2.1 Desktop research

The primary basis for the analysis is extensive desktop research covering:

- EU-level external action, development cooperation, climate, and infrastructure programmes;
- Bilateral development cooperation frameworks and thematic initiatives of EU Member States;
- Multilateral and blended finance instruments relevant to sustainable road and land transport; and
- Academic and research cooperation programmes linking Europe with partner regions.

Sources include official European Commission and Member State policy documents, programme guidelines, public databases, evaluation reports, and project-level documentation. This research was complemented by materials generated within STREnGth_M, including inputs from international task force workshops and expert exchanges.

2.2 Approach to analysis

The analytical approach is structured around identifying **functional linkages and misalignments** between different types of programmes, notably:

- Research and innovation programmes (e.g. Horizon Europe and associated partnerships);
- Development cooperation and climate finance instruments;
- Infrastructure investment and implementation mechanisms; and
- Capacity-building and academic collaboration initiatives.

Rather than treating these instruments in isolation, the analysis examines how they intersect across the transport innovation cycle — from research and piloting to policy uptake and scaled investment. Particular attention is paid to coordination mechanisms such as the Team Europe approach, blended finance models, and joint programming frameworks.

2.3 Scope and thematic focus

The thematic scope of this deliverable covers **sustainable road and land transport systems**, including urban mobility, freight transport, low- and zero-emission vehicles, supporting infrastructure, and enabling digital and policy frameworks. Aviation and maritime transport are excluded.

Geographically, the report focuses on cooperation with **Africa, Asia, and Latin America**, reflecting both WP4 priorities and the regions most prominently addressed in European development and climate cooperation.

The temporal scope extends from current programming cycles (2021–2027) to forward-looking perspectives towards **2030**, in line with EU climate targets and global sustainable development agendas.

3 EU and Member State Programmes for Global Development Cooperation and Innovation

3.1 Introduction

The European Union (EU) and its 27 member states collectively represent the world's largest source of development aid. Their international cooperation policies cover development assistance, climate action, and academic collaboration across Africa, Asia, Latin America, and beyond. These efforts are guided by the Sustainable Development Goals (SDGs) and the Paris Agreement on climate change. Broadly, European development cooperation aims to reduce poverty and inequality while promoting sustainable, inclusive growth in partner countries. In recent years, there is a strong emphasis on **climate change** and **infrastructure**, as well as leveraging **research and educational partnerships** to spur innovation. This report provides a comprehensive analysis of current and upcoming EU-level initiatives and member-state bilateral programs, highlighting opportunities for sustainable road and land transport collaboration (excluding aviation/maritime) and academic linkages that enable innovation in development cooperation. Key examples of programmes and funded projects are included to illustrate these efforts.

3.2 EU-Level Development Cooperation Initiatives

The EU as a bloc maintains extensive programmes for development cooperation and international climate action. These are primarily coordinated by the European Commission (notably the Directorate-General for International Partnerships) under the **2021–2027 Multiannual Financial Framework**. Two cornerstone EU-level initiatives are the **NDICI–Global Europe** financing instrument and the **Global Gateway** strategy, complemented by thematic programs and financial tools to encourage sustainable infrastructure investments.

3.2.1 NDICI – Global Europe (2021–2027)

The **Neighbourhood, Development and International Cooperation Instrument – Global Europe (NDICI–Global Europe)** is the EU's flagship funding instrument for external action from 2021 to 2027. NDICI–Global Europe merges several prior instruments into a single comprehensive fund of **€79.5 billion**. It covers EU cooperation with **all third countries** (except EU enlargement candidates and overseas territories) and is the financial backbone for the EU's global development programs. NDICI is structured into:

- **Geographic programmes** (≈€60.38 billion) for regions: at least €19.32 billion for the EU's Neighbourhood, with the remainder allocated to Sub-Saharan **Africa**, **Asia-Pacific**, and the **Americas & Caribbean**. (Notably, Erasmus+ external actions are funded here with ~€1.8 billion to support educational exchanges with partner countries.)

- **Thematic programmes** (≈€6.36 billion) addressing global challenges (e.g. human rights, civil society, peace and security, and global public goods). Climate change falls under these global challenges.
- **Rapid response** (≈€3.18 billion) for crisis response, stability and conflict prevention, linking humanitarian aid with development action.
- **“Cushion” reserve** (≈€9.53 billion) unallocated funds to address unforeseen needs or new priorities.

NDICI–Global Europe has a strong **climate mainstreaming** mandate. By regulation, **30% of NDICI funds must target climate objectives**. This translates to roughly **€27.8 billion** for climate-related actions over 2021–2027. Indeed, the EU's Green Deal ambition is reflected externally – NDICI investments must support the Paris Agreement, and additional commitments (e.g. an extra €4 billion announced by the Commission President) underscore the high expectations for climate programs. Similarly, NDICI contributes to biodiversity goals (with a rising target of 7.5% → 10% by 2026) and other cross-cutting priorities.

Another innovation of NDICI is its integrated **blending and guarantee** mechanism. Previously separate facilities (like the European Fund for Sustainable Development) are unified under NDICI's **European Fund for Sustainable Development Plus (EFSD+)**, allowing the EU to **blend grants with loans/guarantees** to mobilize private investment for development. The EFSD+ guarantee capacity (up to €40 billion backing) aims to **mobilise up to €135 billion** in public/private financing for sustainable development projects worldwide. This flexible financing is particularly used for infrastructure and SME investments in riskier markets, in line with Global Gateway (discussed next).

NDICI–Global Europe provides the financial muscle for EU development cooperation, prioritizing poverty eradication, **sustainable infrastructure**, climate action, good governance, and other SDG-aligned objectives. Through NDICI, the EU supports thousands of projects in over 100 countries – from rural electrification and water systems to governance reforms – often in partnership with member-state agencies (Team Europe) and multilateral institutions.

3.2.2 Global Gateway: Sustainable Connectivity Strategy

Global Gateway is the EU's major geopolitical initiative (launched in late 2021) to mobilize up to **€300 billion** in investments by 2027 for sustainable infrastructure and connectivity worldwide. It is essentially Europe's offer to partner countries for high-quality investment in **digital, energy, transport, health, education and research** infrastructure – aligning with the EU's values and the SDGs – as an alternative to unsustainable debt-fueled models. Global Gateway seeks to translate the European Green Deal into a “Global Green Deal” through development partnerships.

Key features of Global Gateway include:

- **Focus Sectors:** Five priority sectors are defined – **Digital connectivity, Climate & energy, Transport, Health, and Education & research**. In transport, for example, Global Gateway promotes **“sustainable, smart, resilient, inclusive and safe” transport networks in all modes**. In energy, it supports clean energy and climate

resilience; in digital, bridging the digital divide; etc. All projects are aligned with the Paris Agreement and SDGs.

- **Team Europe Approach:** Global Gateway is implemented via a **Team Europe** approach, meaning the European Commission, EU member states, and European financial institutions (like EIB, EBRD, national development banks) coordinate efforts and pool resources. This inclusive approach leverages the expertise and funding of many actors as a unified package to partner countries.
- **Blended Finance:** The EFSD+ guarantee and other EU budget tools under NDICI are deployed to **de-risk and leverage private investment** for Global Gateway projects. By combining grants, loans, equity and guarantees, the EU aims to crowd in capital for large infrastructure. The **European Investment Bank (EIB)** plays a central role (through its new EIB Global arm) as the largest EFSD+ partner. Per the Commission, Global Gateway's €300 billion includes EU funds, member-state funds, and expected private-sector investments mobilized.
- **High Standards:** Projects under Global Gateway (which also contributes to the G7's Partnership for Global Infrastructure and Investment, PGII) adhere to principles of transparency, good governance, sustainable procurement, and fiscal responsibility. They emphasize climate-friendly and high-quality infrastructure, avoiding unsustainable debt for recipients.

Examples: Since its launch, Global Gateway has begun financing projects across regions. For instance, in **Africa**, Team Europe is investing **€320 million** to upgrade the public transport network in **Dakar, Senegal**, introducing cleaner, safe and affordable transit for the city. This **Bus Rapid Transit system** project is a showcase of Global Gateway in action, co-implemented by the EIB, European Commission, France (AFD), and Germany (KfW/BMZ) together. It will improve mobility for millions, reduce air pollution, and contribute to Senegal's climate goals. In **Central Asia**, the EU has committed about **€10 billion** toward a "Trans-Caspian" transport corridor to link Europe with Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan. This is expected to halve freight times and potentially triple trade volumes by 2030 by creating more efficient rail, road, and port connections, while integrating "soft" measures like trade facilitation and digital systems. Another example is in the **Middle East**: the EU (via EIB) is funding a major desalination plant in Jordan (Aqaba-Amman) to address water scarcity – improving climate resilience and basic services.

Through such projects, Global Gateway is extending the EU's **connectivity agenda** to developing regions with an emphasis on sustainability. It has been promoted as a values-driven partnership model – for example, supporting **Namibia's green hydrogen industry** and other African green transition projects, and financing **fiber-optic cables** for digital education networks in North Africa. While ambitious, Global Gateway is still in early implementation; its success will depend on effectively **delivering complex infrastructure** via Team Europe coordination and attracting sufficient private investment.

3.2.3 Thematic Climate Action and Other EU Programs

In addition to NDICI and Global Gateway, the EU operates specific thematic initiatives relevant to climate and transport. One notable example is the **Global Climate Change Alliance Plus (GCCA+)**, an EU-funded program (under NDICI's predecessor) that supports climate

adaptation and resilience in least-developed countries and small islands. The EU also channels climate finance through contributions to multilateral funds (like the Green Climate Fund) and targeted partnerships such as **Just Energy Transition Partnerships (JETPs)** under the G7 (to which the EU contributes via Global Gateway).

Blending facilities under NDICI allow the EU to fund sustainable infrastructure in partner countries by mixing grants with loans from development finance institutions. For instance, the **EFSD+ guarantees** are being used to back EIB loans for **clean energy, green infrastructure and health** in countries where sovereign risk is high. Transport investments (e.g. modernizing roads or rail with low-carbon designs) can also benefit from these guarantees as part of the **€135 billion mobilization** target. The EU's aim is to ensure such infrastructure contributes to climate mitigation or adaptation, given the 30% climate spending target in NDICI.

Another EU-level program intersecting development and academia is **Erasmus+** (covered in detail later), which dedicates a portion of its budget to capacity-building in higher education in developing regions. Additionally, research cooperation programs like **Horizon Europe** allocate funds for international collaborative research addressing global challenges, often including developing-country partners (for example, joint research on climate-smart transport or sustainable cities). In Horizon Europe (2021–2027, €95+ billion programme), the EU explicitly links R&I funding to **tackling climate change and achieving SDGs** while encouraging global collaboration. This creates synergy between EU research policy and its development and climate objectives.

Overall, at EU level, there is a *comprehensive framework* that blends policy, funding, and partnerships: NDICI–Global Europe provides the broad funding envelope; Global Gateway sets strategic infrastructure priorities; thematic programs (climate, etc.) and academic exchanges complement these; and financial instruments like EFSD+ and EIB Global enable large-scale investments in sustainable development.

3.3 EU Member State Bilateral Cooperation Programmes

Each of the 27 EU member states runs its own bilateral development cooperation programs alongside the EU-level initiatives. These national programs vary in scale and focus, but all contribute to the shared goals of global sustainable development and climate action. Many member states prioritize **partnerships in Africa, Asia, and Latin America**, often reflecting historical ties or foreign policy priorities. Below, we outline each member state's development cooperation framework – highlighting major donor countries in detail – and identify relevant programmes open to sustainable road/land transport collaboration. We also provide example projects to illustrate the kind of transport or infrastructure initiatives funded.

3.3.1 Germany (BMZ / GIZ / KfW)

Germany is one of the world's largest bilateral donors, allocating 0.7% of its GNI to Official Development Assistance in recent years (amounting to tens of billions of euros annually). German development cooperation is managed by the **Federal Ministry for Economic**

Cooperation and Development (BMZ), which sets policy and funding priorities. Implementation is carried out by agencies such as **GIZ** (Deutsche Gesellschaft für Internationale Zusammenarbeit – technical cooperation) and **KfW Development Bank** (financial cooperation loans/grants). Germany's approach, guided by its *BMZ 2030* strategy, emphasizes partnerships with a select number of priority countries and global initiatives, focusing on themes like climate change, poverty reduction, education, sustainable economic development, governance, and crisis prevention.

A hallmark of Germany's program is its strong leadership on **international climate action**. The BMZ co-launches and supports high-profile climate initiatives. For instance, Germany has pioneered **Climate and Development Partnerships** – tailored bilateral climate agreements with countries that have ambitious climate goals. Through these partnerships (and via G7 platforms like **Just Energy Transition Partnerships**), Germany helps fund countries' transitions to renewable energy, low-carbon transport, and resilience, leveraging both public and private finance. Partners include major emitters and vulnerable countries alike. Germany also co-founded the global **NDC Partnership** to assist developing countries in implementing their Paris Agreement pledges.

Moreover, Germany's Federal Environment Ministry runs the **International Climate Initiative (IKI)**, a program started in 2008 which has invested heavily in climate and biodiversity projects in developing countries. **IKI has funded 1000+ projects in over 150 countries, committing about €7.5 billion** to date. These projects range from renewable energy deployment to sustainable transport pilots and conservation efforts, making IKI a key instrument of Germany's climate finance commitment.

In terms of **geographic focus**, Germany's bilateral aid spans Africa (a major focus on sub-Saharan Africa), Asia (notably South and Southeast Asia), the Middle East and Latin America, as well as supporting Eastern European neighbors. For example, BMZ coordinates sizable programs in countries like Ethiopia, Ghana, India, Indonesia, Brazil and Mexico, among others.

Germany's portfolio in **sustainable transport and infrastructure** is significant and often implemented via GIZ and KfW in collaboration with local governments. German development policy recognizes that **good infrastructure is a basis for sustainable development**, enabling access to markets, education, and healthcare. Through initiatives like the **G7 Partnership for Global Infrastructure and Investment (PGII)** and EU's Global Gateway, Germany invests in sustainable roads, railways, and urban transport systems. German-supported projects pay special attention to climate and environmental aspects (e.g. promoting public transit over private vehicles, climate-resilient road construction, or electric mobility) and social inclusion (ensuring the poor benefit from mobility improvements).

Examples: One flagship initiative funded by BMZ is the **Transformative Urban Mobility Initiative (TUMI)** – a global program supporting climate-friendly urban transport. TUMI, launched in partnership with multiple organizations, is **funded by BMZ and implemented by GIZ**, and it supports pilot projects, capacity building, and investments in cities worldwide. The focus is on innovative solutions (applying the “Avoid–Shift–Improve” paradigm of sustainable transport) such as electric bus fleets, non-motorized transport infrastructure, and integrated

mobility planning. Through TUMI, Germany has supported urban mobility improvements in cities as diverse as Bogotá, Cairo, Hanoi, and Nairobi.

In **India**, for example, BMZ commissioned GIZ to implement the **“SMART-SUT” project (Integrated Sustainable Urban Transport Systems for Smart Cities)** from 2017–2022. This project worked with India’s national and city authorities to improve urban transport planning in cities like Kochi and Bhubaneswar. It helped develop frameworks for Mobility-as-a-Service and capacity building at national and state levels, and supported local pilot projects for integrated transit systems. By strengthening institutions and policies, the project aimed to make Indian cities’ transport more accessible, safe, and low-carbon – for instance, promoting better public bus services and non-motorized transport options. Such cooperation demonstrates how German technical assistance can enable partner countries to implement sustainable transport innovations.

Germany also provides **infrastructure financing** via KfW. For instance, KfW (often co-financing with other donors) has extended concessional loans for roads, rail and urban transit in many developing countries – ensuring these projects meet environmental and social standards. A recent high-profile case (as part of Team Europe) is Germany’s involvement in co-financing the **Dakar Bus Rapid Transit project in Senegal** mentioned earlier, via KfW on behalf of BMZ. Likewise, KfW has financed rural road rehabilitation in Northern Ethiopia and electrified rail corridors in India, to name a few, always with an eye on development impact and sustainability.

In summary, Germany’s bilateral programs – through BMZ’s strategic funding, GIZ’s on-the-ground projects, and KfW’s development banking – cover a broad spectrum from community-level development projects to large infrastructure. **Sustainable transport is a notable priority**, seen as both a climate action (reducing emissions via public transport, e-mobility) and a development necessity (improving access and economic opportunity). Combined with its strong academic and climate partnerships (see Academic Collaboration section), Germany positions innovation and green infrastructure at the heart of its cooperation efforts.

3.3.2 France (AFD)

France is another major European donor with a prominent development agency, the **Agence Française de Développement (AFD)**. AFD and its private-sector arm Proparco together operate in over 100 countries, with France’s bilateral ODA focusing on **Africa** (particularly Francophone Africa and the Sahel), North Africa/Middle East, and parts of Asia and Latin America. French cooperation emphasizes the notion of *“shared development”* – working as partners to promote social and economic progress, stability, and environmental protection in the global South. Key sectors for France include **infrastructure (transport, energy, water)**, climate change mitigation and adaptation, urban development, health, and education. France has also integrated the **Paris Agreement goals** into its development strategy, aiming to align all its funding with low-carbon and climate-resilient pathways.

The French Development Agency **AFD supports holistic mobility systems**, combining infrastructure with support for institutions and policies. The philosophy is to ensure people and goods can move efficiently, equitably, and sustainably – “so that each actor can travel with

effective, **equitable and sustainable solutions**". This often means funding not just the construction of transport infrastructure, but also accompanying measures like regulatory reforms, capacity building for transport authorities, and complementary investments (e.g. in digital systems or transit-oriented development).

Transport and urban mobility are a flagship domain for AFD. For example, AFD has financed **mass transit projects** in numerous cities: metros, tramways, and bus rapid transit. In **Dar es Salaam, Tanzania**, AFD is co-financing the construction of **Phase 5 of the city's Bus Rapid Transit (BRT) network** to be completed by 2027. This project will add nearly 28 km of BRT corridors, 36 stations, and feeder routes to Dar es Salaam's transit system. By expanding high-capacity public transport, it aims to relieve the city's congestion and provide affordable mobility for a fast-growing population of over 5 million. AFD's investment (a €178 million concessional loan) supports the Tanzanian authorities' long-term plan of a 140 km BRT network across six phases. Such urban projects not only cut travel times and pollution but also improve access to jobs and services for urban residents.

Another example is AFD's support for **urban rail and metro systems**. In **Surat, India**, AFD is financing the development of a new metro line. The project, implemented with the Gujarat Metro Rail Corporation, aims to offer a sustainable public transport option in one of India's rapidly growing cities, reducing emissions and dependence on private vehicles. And in **Addis Ababa, Ethiopia**, AFD has been involved in improving and extending the city's bus and light rail systems. AFD often coordinates with the EU and other European lenders (such as EIB or Germany's KfW) on large infrastructure: for instance, AFD and the EU are partners in the "**MobiliseYourCity**" initiative which supports cities in 15+ developing countries to plan sustainable urban mobility.

In the **roads sector**, France via AFD also invests in inter-city transport and regional connectivity – for example, rehabilitating vital road corridors in West and Central Africa to spur trade while incorporating safety and climate resilience measures. French aid has a special focus on **Africa**: indeed, **Sub-Saharan Africa is the priority region for AFD Group activities**, receiving the largest share of its financing. Within Africa, France targets infrastructure as a driver of development (e.g. improving access to electricity and transport as fundamental enablers).

On **climate**, France has committed to allocate a significant portion of its aid to climate finance. AFD has a goal to be a "100% Paris Agreement" institution, screening projects for climate impact. It runs initiatives like the **French Facility for Global Environment (FFEM)** and contributes to the Green Climate Fund. Notably, AFD partnered with the Green Climate Fund on a programme spanning 17 African and Latin American countries to develop renewable energy, energy efficiency, and public transport solutions.

In sum, **France's bilateral programs (AFD)** are characterized by large-scale development finance with an emphasis on infrastructure, climate action, and social development. AFD often blends French resources with EU funds or multilateral loans, acting as a pivotal European player in development. **Sustainable transport** is a clear priority – whether it's urban transit systems, inter-city road/rail links, or encouraging "smart" mobility – as evidenced by the Dar

es Salaam BRT project and many others. France's historical and linguistic ties also mean it invests heavily in human development (education, governance, cultural cooperation) in Francophone countries, complementing the hard infrastructure with capacity building.

3.3.3 Sweden (Sida)

Sweden is widely respected in the development community for its principled and generous aid program. The Swedish International Development Cooperation Agency (**Sida**) manages most of Sweden's bilateral aid, under policy direction from the Ministry for Foreign Affairs. Sweden consistently meets or exceeds the 0.7% of GNI target for aid; its cooperation is guided by a commitment to **poverty reduction, human rights, and sustainable development**. Thematically, Swedish aid prioritizes areas such as **democracy and good governance, gender equality, health, education, environment and climate change, and conflict prevention**. Geographically, Sweden focuses on the poorest regions, especially Sub-Saharan **Africa**, but also parts of Asia (Middle East, South Asia) and Latin America, as well as providing substantial support to humanitarian assistance.

Sida's approach is highly inclusive – it **channels resources and knowledge through civil society, universities, public agencies, and private sector partners** to achieve development results. In Sida's own words, it “allocates resources and knowledge with the goal of making a difference for people in Africa, Asia, Europe and South America,” collaborating with **civil society and universities as well as public and private sector** actors. This multi-actor partnership model means Sweden often funds NGOs, international organisations, and research institutions to carry out projects, in addition to government-to-government cooperation.

On **climate and environment**, Sweden has been a champion. It was among the first to integrate environmental sustainability across its portfolio and has a strong track record in supporting climate adaptation in developing countries. For example, Sida finances programs in least-developed countries to build resilience to climate change (such as water resource management in drought-prone areas and sustainable agriculture initiatives). It also places emphasis on **clean energy access** and **biodiversity conservation** as part of development. A 2022 government strategy reaffirmed that Swedish aid in regions like Africa will strengthen environmental and climate work alongside poverty reduction.

While Sweden's aid is less about large infrastructure and more about **capacity and systems**, it does support infrastructure indirectly via multilateral channels or specific funds. For instance, Sweden contributes to the **African Development Bank** and World Bank funds that finance transport projects, and it has supported sustainable cities initiatives (like urban planning improvements) in partner countries. **Transport** as a sector features in Sida's agenda mainly under the rubric of climate and urban development – e.g., Sida might fund a project to help a city develop a climate-friendly urban mobility plan, or support rural road maintenance to ensure isolated communities have access to markets and services.

An example of Sweden's innovative funding is its involvement in the **Global Climate Adaptation** efforts – Sweden was a driving force behind the **Global Environment Facility** and the **Adaptation Fund**, and more recently pledged funds to the new Loss and Damage fund. Through such mechanisms, developing countries have been able to implement projects like

flood-resilient road construction or early warning systems (where Swedish expertise in weather services is often shared). Additionally, Sida is a key donor to the **Sustainable Infrastructure for All** initiative and similar multi-partner programs focusing on infrastructure that is both climate-smart and inclusive.

Importantly, Sweden integrates **academic cooperation** in its aid – for example, funding research partnerships via programs like **Research Cooperation** (often implemented by Sida's Department for Research Collaboration) to build research capacity in developing countries' universities, and offering **Swedish Institute scholarships** for students from developing regions. These efforts help train engineers, urban planners, and environmental scientists who can then contribute to sectors like sustainable transport at home.

In summary, **Swedish development cooperation (Sida)** is strongly oriented toward **social development and climate justice**, working through partnerships that empower local communities and institutions. While not a major financier of roads or bridges per se, Sweden's support creates the enabling environment – policies, trained human resources, community engagement – that makes infrastructure effective and sustainable. For instance, a Sida-funded governance project might ensure that when a road is built (perhaps with another donor's financing), local governments have the capacity to maintain it and local people have a voice in its design. This collaborative ethos and focus on long-term capacity make Sida's programs critical enablers for sustainable transport and innovation.

3.3.4 The Netherlands

The Netherlands manages its development cooperation through the Ministry of Foreign Affairs (DG International Cooperation) without a separate implementation agency (embassies often oversee bilateral programs, and entities like the Netherlands Enterprise Agency handle some grants). Dutch aid has a distinct focus on combining **aid with trade and investment**, reflecting a policy of fostering self-reliance and economic development in partner countries. Dutch cooperation concentrates on a set of partner countries in regions such as the Sahel, Horn of Africa, Middle East and parts of Asia. Thematically, Dutch priorities include **water management, agriculture & food security, sexual and reproductive health and rights (SRHR), gender equality, climate change, and private sector development**.

A signature Dutch priority is **water and infrastructure** – drawing on Dutch expertise in water management. Many Dutch-funded projects help developing countries with flood control, irrigation, clean drinking water, and sanitation. This has links to transport insofar as climate-resilient infrastructure (e.g. protecting roads/bridges from floods) and port development (given the Dutch prowess in ports) are areas of engagement. For example, the **Dutch Fund for Climate and Development (DFCD)**, a €160 million fund, invests in climate-resilient water systems, nature-based solutions and also supports sustainable infrastructure projects in vulnerable countries. The DFCD finances, inter alia, projects like mangrove restoration to protect coastal roads or climate-proofing urban drainage to prevent transport disruptions.

The Netherlands is also a leading advocate for **climate adaptation in Africa**. In 2021 it co-launched the **Africa Adaptation Acceleration Program (AAP)** with the African Development Bank, pledging funding to scale up adaptation, including infrastructure resilience. Dutch

support (e.g. a recent €110 million pledge) to AAP will help African countries integrate climate adaptation in investments like road networks and agriculture.

When it comes to direct transport sector involvement, the Dutch often work via multilateral channels or public-private partnerships. Through programs like **Drive (Development Related Infrastructure Investment Vehicle)** and previously ORIO, the Netherlands has co-financed port upgrades, roads, and public transport, usually with an emphasis on leveraging private investment and ensuring projects “do what we’re good at” (to quote a recent Dutch aid strategy focus). This often means projects that utilize Dutch expertise in areas like dredging, logistics, or bicycle infrastructure (the Dutch have supported cycling promotion in some cities abroad).

The Netherlands also strongly supports **entrepreneurship and innovation** in partner countries. A relevant example is the **SDG Partnership facility (SDGP)** which has funded projects including sustainable transport logistics in agricultural value chains, and the **Danish (Danida) and Dutch collaboration** with IFC on a Bangladesh Climate Partnership shows Dutch interest in climate-smart industrial growth.

In summary, **Dutch development programmes** aim to create synergy between development and business – tackling issues like climate change and water (which also impact transport infrastructure) while promoting economic opportunities. The Netherlands often takes a catalytic role, funding pilot projects or co-investing in funds that can then attract bigger financing. For sustainable transport, the Dutch contributions might not always be labeled as such, but come through **climate resilience, urban planning, and water management initiatives** that are crucial for the long-term viability of transport systems in developing countries.

3.3.5 Denmark (Danida)

Denmark’s development cooperation, commonly branded as **Danida**, is known for its focus on least-developed countries and fragile states, and its leadership on **human rights and humanitarian action**. Denmark’s current strategy “*The World We Share*” (2021–2025) encapsulates two main priorities: **(1) fighting poverty and inequality**, especially in places affected by conflict and displacement, and **(2) leading the fight against climate change** and environmental degradation. In line with this, Denmark targets its aid to regions such as sub-Saharan Africa (with a focus on the Sahel, East Africa) and parts of the Middle East. It maintains a commitment to spend 0.7% of GNI on ODA, which it fulfilled in 2023.

Danish aid places a premium on **fragility and conflict** – helping “people where it is hardest” – which means many programs in Sahel, Afghanistan (historically), Syria region, etc., providing a blend of humanitarian and development support. At the same time, Denmark positions itself at the forefront of **climate action** in development, aiming to “lead the fight” by heavily investing in climate adaptation, nature, and green solutions for the poor. Areas like **renewable energy, climate-smart agriculture, water resource management, and climate-resilient infrastructure** receive Danish support.

One distinctive tool Denmark uses is the **Danida Sustainable Infrastructure Finance (DSIF)** facility. DSIF is **Denmark’s primary aid mechanism for large-scale infrastructure projects in developing countries**, funded by the Ministry of Foreign Affairs and managed by the

Investment Fund for Developing Countries (IFU). It provides **concessional loans and grants** to make vital infrastructure projects viable in low-income countries – particularly when such projects are not commercially financeable. The goal is to enable sustainable public infrastructure that contributes to the SDGs, especially climate and poverty objectives. For example, DSIF has financed renewable energy installations, water treatment plants, and hospital infrastructure in countries like Vietnam, Bangladesh, and Uganda. In the transport realm, DSIF could support projects like **green public transportation or climate-proof road networks**, aligning with Denmark’s climate and development strategy (though historically DSIF projects have skewed to energy and water sectors). All DSIF projects must be sustainable, demand-driven by the partner government, and ideally leverage Danish expertise or technology (like wind energy or efficient energy systems).

Beyond DSIF, Denmark also has a **Danida Business Partnerships** program to engage Danish companies in development solutions, and funds research through Danida-funded research grants (often via the Danida Fellowship Centre) that tackle issues like climate adaptation, health, etc..

Denmark’s bilateral programs in core partner countries – e.g. Tanzania, Uganda, Bangladesh, Mali – often include components to improve infrastructure as part of broader sector support. For instance, a Danish-funded **agricultural value-chain program** might build rural feeder roads to connect farmers to markets, or an **education sector program** might include constructing climate-resilient school buildings. While Denmark might not directly finance highways or major transport systems alone, it co-funds through multilaterals. Also, under the **Team Europe** framework, Denmark contributes to EU initiatives like the Global Gateway and various Team Europe projects. For example, Denmark has been involved in **African renewable energy projects** that also strengthen grids (indirectly supporting electrification of transport in the future).

In conclusion, **Denmark’s aid (Danida)** is strategically oriented toward **climate and fragility**, with infrastructure being financed selectively when it clearly serves development needs and can be done sustainably. The creation of DSIF underscores Denmark’s recognition that infrastructure (including transport) is “crucial for sustainable and inclusive development” – and that concessional financing is sometimes needed to make it happen. Danish-funded infrastructure projects are expected to adhere to high standards in terms of environmental and social impact, and often showcase “**Danish strong suits**” like renewable energy and energy efficiency.

The major donors above – Germany, France, Sweden, Netherlands, Denmark – were detailed individually. To cover all EU members, we will now briefly summarize the programs of other countries, many of which have smaller but still significant cooperation initiatives.

3.3.6 Other EU Member States’ Development Programs

Belgium: The Belgian Development Cooperation is managed by the Directorate-General for Development Cooperation and implemented by **Enabel** (Belgium’s development agency). Enabel operates in about **21 countries** (notably in **sub-Saharan Africa** and some North African countries), focusing on sectors like **agriculture, digitalization, education, energy, and health**. Belgium’s bilateral aid has a strong concentration in Central Africa (e.g. DR Congo,

Rwanda, Burundi) and West Africa (e.g. Senegal, Mali), often aiming to strengthen health systems, education (including vocational training), and government capacity. Belgium also supports **ecological and resilient infrastructure**, promoting sustainable construction and maintenance practices in partner countries. For instance, in the Great Lakes region, Belgian projects have helped develop roads and hydroelectric power with attention to biodiversity and community benefits. Given Belgium's linguistic division, it tends to work in Francophone countries (complementing France's efforts). Belgium is also active in **fragile states** and has provided significant humanitarian aid. In transport, Enabel has supported rural road rehabilitation to improve market access for farmers (e.g. in Uganda and Niger) and urban public transport planning in some African cities as part of climate action.

Spain: Spanish development cooperation (coordinated by the Spanish Agency **AECID**) prioritizes countries in **Latin America and the Caribbean** (due to historic and linguistic ties), as well as North and West Africa and parts of Asia. Spain's cooperation policy emphasizes a *"global social contract"* for sustainable development where no one is left behind. Spain recently updated its legal framework with a 2023 Cooperation Law to enhance effectiveness and align with EU policies. The newest **Master Plan (2025–2028)** outlines priorities such as gender equality, democratic governance, universal health coverage, climate change, and inclusive economic growth. Spanish aid often has a strong **human development focus** (education, health, social protection) and **cultural cooperation** dimension (leveraging language and cultural ties). For example, Spain has funded many programs in Central America for rural development and in the Sahel for food security and governance. In terms of transport, **Spain's contributions come through multilateral efforts** and technical cooperation; for instance, Spain set up a trust fund with the African Development Bank for technical assistance in infrastructure (the **Spanish Cooperation Fund for Technical Assistance**, which supports sectors like renewable energy, urban development, and transport planning). Also, Spanish cooperation often includes a focus on **resilient infrastructure** in the context of climate adaptation and disaster risk reduction (e.g. helping Andean countries with climate-resilient road design given mountain geographies). With its increasing emphasis on climate, Spain is likely to back sustainable transport indirectly via its climate finance commitments and EU contributions.

Italy: Italy's development cooperation is managed by the Ministry of Foreign Affairs and implemented by the **Italian Agency for Development Cooperation (AICS)** since 2016. Italy's aid program places weight on the **Mediterranean and Middle East/North Africa (MENA)** region (for example, countries like Tunisia, Egypt, Lebanon) and on **Sub-Saharan Africa** (especially the Horn of Africa and Sahel), partly to address migration drivers. Italy also maintains some programs in Latin America (e.g. supporting rural communities and indigenous rights). The three-year Programming Document for 2021–2023 identifies thematic priorities aligning with SDGs – with **ecologically sustainable agriculture, clean water access, renewable energy, quality education, decent work, and gender equality** among top focus areas. This indicates Italian cooperation projects often revolve around those sectors. For instance, Italy might fund an agricultural development project in Ethiopia that also builds irrigation (water) infrastructure, or a vocational training program for youth in Côte d'Ivoire (education and jobs). **Infrastructure** in Italian aid tends to be on a human scale – clinics, schools, water systems – rather than large transport infrastructure, but there are exceptions: Italy has financed roads and bridges in Mozambique and Afghanistan in the past, and it contributes to **multilateral development banks** that fund transport. Recently, Italy proposed a "Mattei Plan for Africa" which aims to

integrate development, energy cooperation, and migration management in Africa, suggesting potential Italian investments in energy and connectivity projects (though details are emerging). AICS also works on cultural heritage preservation (Italy often helps restore historic sites), which sometimes ties into sustainable tourism and infrastructure in developing countries.

Ireland: Ireland's development cooperation program ("Irish Aid") is strongly poverty-focused, with a concentration on **Sub-Saharan Africa** (notably East and Southern Africa – countries like Ethiopia, Uganda, Tanzania, Zambia, Malawi, Mozambique, Sierra Leone, etc.). Ireland's aid priorities include **hunger and nutrition, global health, education, governance/human rights, and climate resilience**. As a smaller donor, Ireland often specializes in niches – for example, it has been a leading supporter of agricultural research for drought-resistant crops and of education initiatives for girls. Irish Aid also emphasizes building peace and responding to humanitarian crises (given Ireland's own history, it often stresses peacebuilding). While Ireland does not typically fund large infrastructure, it has supported rural road improvements and water infrastructure as components of livelihood programs. Climate action is increasingly integrated: Ireland committed to doubling its climate finance by 2025, focusing on adaptation. Academic partnership is also important – Ireland provides fellowships for students from its partner countries to study in Irish universities (developing human capital in sectors like engineering, health, etc., which ultimately benefits infrastructure and services in those countries).

Austria: Austria's development agency **ADA** (Austrian Development Agency) focuses on a mix of regions: the **Western Balkans and Eastern Europe** (owing to geographic proximity) and **Africa** (especially East Africa and the Sahel). Priority countries include Ethiopia, Uganda, Mozambique, Bhutan, Albania, and others. Austrian aid's thematic focuses are **water and sanitation, renewable energy, rural development, education, and governance**. Austria is known for supporting **hydropower projects** (leveraging Austrian expertise) and rural electrification in African countries, which indirectly supports cleaner transport (e.g. powering electric mobility in the future). It also emphasizes **vocational training** and SME development, which in some partner countries involves training mechanics for vehicle maintenance or construction trades for infrastructure building. While Austria's aid budget is modest, it often punches above its weight in specific sectors – for instance, ADA has a strong portfolio in **water resource management** (ensuring communities and farms have water access, which ties into climate adaptation). Austria also actively supports **EU Eastern Neighbourhood** countries like Moldova and Georgia with infrastructure and institution-building as they converge with EU standards.

Central and Eastern EU Members: Many of the newer EU member states (those in Central, Eastern, and Southern Europe that joined in the 2000s) have smaller, yet growing, development cooperation programs, often managed by their foreign ministries or dedicated agencies:

- **Poland:** Polish development cooperation (branded **Polish Aid**) is coordinated by its Ministry of Foreign Affairs. Poland, having transitioned to a donor after receiving aid in the 1990s, focuses on sharing its transition experience. Its priority regions are Eastern Europe (Ukraine, Belarus, Georgia, Moldova) and selected African and Asian countries. Polish Aid **focuses on governance, democracy, human rights, entrepreneurship, and environment**. In Eastern Europe, Poland funds governance reforms and small infrastructure (e.g. local roads, schools) to support EU neighbors. In Africa (e.g.

Kenya, Tanzania), Polish projects have ranged from maternal health to vocational training (Kenya and Tanzania are priority countries where Poland has helped with health clinics and entrepreneurship, for example). Poland also launched a **Polish Challenge Fund** in partnership with UNDP to encourage Polish tech companies and universities to propose innovative solutions for development challenges in partner countries. This fund has facilitated the transfer of **Polish know-how, technology, and innovative solutions** by engaging private sector and research institutes – a good example of academic collaboration and innovation in a development context. For instance, Polish engineers might help digitize a land registry or design an app for public transport info in a partner country as part of Challenge Fund projects. Such contributions, while modest in scale, add to sustainable transport systems (like ICT solutions for transit).

- **Czech Republic:** The **Czech Development Agency (CzDA)** implements Czech aid, which similarly focuses on sharing transformation experience with Eastern Europe and the Balkans, and on supporting select poorer countries (e.g. Ethiopia, Zambia, Cambodia, Georgia, Moldova, Bosnia). The Czech Republic has a special program with UNDP – the **Czech-UNDP Partnership for the SDGs** – to deploy Czech expertise in partner countries. Initially a trust fund for Eastern Europe, since 2018 this partnership (CUP) expanded to countries like **Bosnia, Ethiopia, Georgia, Cambodia, Moldova, Zambia**, focusing on providing **Czech technical assistance and innovative solutions** for the SDGs. This often involves dispatching Czech experts in areas of comparative advantage (e.g. energy efficiency, mining safety, public administration). For example, Czech hydrologists might help with drought management in Zambia, or Czech IT experts with e-governance in Moldova. The Czech Republic's aid projects include renewable energy installations, healthcare improvements, and vocational training centers. In Ethiopia, the Czechs have supported the **coffee value chain and rural road access**, and in Cambodia, water supply systems – showing a willingness to fund smaller-scale infrastructure that directly benefits communities.
- **Slovakia:** **SlovakAid** is the Slovak Republic's aid program, focusing on Eastern Europe (Ukraine, Moldova, Georgia) and some African countries (Kenya, South Sudan) as well as sharing transition knowledge. Slovakia often partners with UNDP (similar to Czech) and funds scholarships for students from developing countries. Areas of focus include governance, water and sanitation, energy, and agriculture.
- **Hungary:** Hungary's development cooperation (through its Hungary Helps agency and MFA) has emphasized humanitarian aid and assistance to persecuted religious communities, as well as sharing expertise in water management (Hungary has hosted the Budapest Water Summit and leads water initiatives). Hungarian aid projects exist in the Western Balkans, East Africa (Uganda, Kenya), and Middle East. For instance, Hungary Helps has built schools and clinics in Middle Eastern post-conflict areas.
- **Romania:** Romania established **RoAid** (Romanian Agency for International Development) which focuses on the Eastern Neighborhood (Moldova, Ukraine) and some African states (North/Francophone Africa). Romanian aid often goes to democracy support and education/training programs.
- **Baltic States (Estonia, Latvia, Lithuania):** Their aid programs are relatively small, primarily targeting Eastern Partnership countries (like Ukraine, Georgia, Belarus) and some aid to Africa through NGOs or the EU. They often contribute unique expertise – e.g. **Estonia** shares its renowned e-governance solutions with countries like Ukraine and African Union (AU) through development projects. This can indirectly assist

transport administration (e.g. digitalizing transport licensing). **Latvia and Lithuania** similarly share public administration and ICT knowledge.

- **Portugal:** Portugal's cooperation (through Camões I.P.) is heavily oriented to Lusophone countries – e.g. Mozambique, Angola, Guinea-Bissau in Africa, as well as Timor-Leste (Asia) and some in Latin America (Brazil cooperation on triangular basis). Portugal emphasizes education (especially Portuguese language training), health, and institutional capacity. It also supports these countries in **climate change adaptation** and renewable energy (for example, Portugal has helped install solar panels in Cape Verde and develop hydropower in Mozambique). Given linguistic ties, academic collaboration (via scholarships and university partnerships) is a big part of Portuguese aid.
- **Greece and Cyprus:** These southern EU states have smaller programs focused on their neighborhood (Balkans, Middle East). **Greece's Hellenic Aid** historically supported the Western Balkans' reconstruction and some aid to the Middle East/Africa (often via multilateral channels). **Cyprus** provides aid largely as technical assistance in its region (Eastern Med, e.g. supporting education in Lebanon or a small solar project in Jordan).
- **Finland:** Finland (though Nordic, not mentioned above in detail) has a strong development program managed by its Foreign Ministry. Finland prioritizes **gender equality, education, innovation, and climate**. It works in East Africa (Tanzania, Kenya, Somalia) and Asia (Nepal, Myanmar). Finland has particular expertise in **education system support** (exporting its model) and in clean tech. It has funded projects on **sustainable forestry, renewable energy (like solar/wind)** and **digital innovation hubs** in Africa. Finland also spearheads initiatives like the **Education Fund for Africa** and supports academic partnerships (the HEI ICI program links Finnish universities with developing country universities to improve higher education). In transport, Finnish aid contributed to developing inexpensive bridge technology for rural areas (with local materials) and to improving road safety via digital solutions – aligning with its tech-oriented approach.
- **Luxembourg:** Despite its small size, Luxembourg is notable for a very high ODA/GNI ratio (often around 1%). Luxembourg's aid focuses on a few priority countries (like Burkina Faso, Niger, Mali, Senegal, Laos, Nicaragua) and sectors such as health, vocational training, and microfinance. **LuxDev**, the agency, implements projects like hospital upgrades, teacher training, and rural development. Luxembourg is also big on **ICT for development** and launched initiatives on satellite data for agriculture and disaster management. While Luxembourg doesn't build roads, it might fund a **bridge or a solar electrification for a health center** – always aiming at poverty reduction. It's also a strong supporter of multilateral funds (e.g. GAVI for vaccines, Climate Finance, etc.).

Many of these member states integrate their efforts under **Team Europe Initiatives**, which are joint programs where the EU Delegation and member states coordinate in a partner country on a priority theme (for example, a **Team Europe Initiative on Green Transport in a specific country** could see multiple EU nations and the EU pooling funds and expertise).

To summarize the member state programs: **all 27 EU countries contribute to development cooperation**, with larger donors (Germany, France, Nordics, Netherlands) providing the bulk of funding and more specialized programs from smaller donors complementing them. There is strong collective attention to **climate and environment** across the board, meaning many national programs (big or small) now incorporate climate action – including sustainable transport

as a sub-component – even if their primary focus is elsewhere. In practice, a sustainable transport project in a developing country might be funded by a blend of sources: e.g. an EU grant, a loan co-financed by France and Germany, technical assistance by Poland or the Czech Republic, and perhaps tied to a UK or Japan project – illustrating the collaborative nature of development finance.

Below is a summary table of EU member states' development cooperation, highlighting their primary agencies and focus:

Table 1: EU member states' development cooperation, highlighting their primary agencies and focus

Country	Main Agency / Mechanism	Regional Focus	Key Sectors & Initiatives
Germany	BMZ (Ministry); GIZ, KfW	Sub-Saharan Africa, Asia, MENA; global initiatives	Climate partnerships (IKI), infrastructure (transport, energy), governance, health, education. Large projects via KfW; technical cooperation via GIZ (e.g. TUMI urban mobility).
France	AFD (Agence Française de Dév.)	Sub-Saharan Africa, MENA, ASEAN, LAC	Sustainable infrastructure (transport, energy, water); climate finance (100% Paris-aligned portfolio); urban development, health, education. Notable projects: mass transit in cities (BRT, metro).
Sweden	Sida (Swedish Int'l Dev. Coop. Agency)	Sub-Saharan Africa, MENA, Asia	Poverty reduction, democracy, gender, climate/environment. Works via civil society & academia. Climate adaptation and renewable energy are priorities; supports capacity building in all sectors.
Netherlands	Min. of Foreign Affairs (DGIS); FMO (dev. bank)	Sahel, Horn of Africa, MENA, Bangladesh, Indonesia	Water management, agriculture/food security, SRHR, climate resilience. Emphasis on public-private partnerships (e.g. Dutch Fund for Climate & Development) and leveraging trade/investment.
Denmark	Danida (MFA); DSIF via IFU	Sub-Saharan Africa (Sahel, East), MENA, Asia (Bangladesh)	Climate change adaptation and mitigation, humanitarian/fragile states, human rights, gender. DSIF provides concessional finance for infrastructure (e.g. renewable energy, water, potentially transport).
Belgium	Enabel (Belgian Dev. Agency)	Sub-Saharan Africa (Great Lakes, West Africa), MENA	Health, education, agriculture, governance. Increasing focus on resilient infrastructure (e.g. eco-friendly construction). Active in DRC, Mali, Niger etc., improving social services and connectivity.
Spain	AECID (Spanish Coop. Agency)	Latin America & Caribbean, North/West Africa, Middle East	Governance, gender, rural development, health, education, culture. Supports sustainable development within Agenda 2030 framework. Multilateral engagement for infrastructure (e.g. Spanish fund at AfDB for energy/transport).
Italy	AICS (Italian Agency for Dev. Coop.)	MENA, Horn of Africa, Sahel, Latin America (Lusophone)	Rural development (agriculture, water), health, education, cultural heritage. Emphasis on migration-related development (job creation, stability). Priority to sustainable agriculture, water, energy, education .
Ireland	Irish Aid (Dept. of Foreign Affairs)	East and West Africa (LDCs), fragile states	Hunger and food security, global health, basic education, climate resilience, good governance. Focus on poorest communities; supports capacity building and

Country	Main Agency / Mechanism	Regional Focus	Key Sectors & Initiatives
			NGOs. (Transport is addressed via rural access in agri programs, etc.)
Austria	ADA (Austrian Dev. Agency)	Western Balkans, East Africa, Central America	Water/sanitation, renewable energy, rural development, education, private sector. Austria leverages alpine expertise (hydropower, mountain road safety). Strong in water & energy infrastructure for local communities.
Poland	Polish Aid (MFA Dept.)	Eastern Europe (Ukraine, Belarus, Georgia), East Africa (Kenya, Tanzania), Middle East	Good governance, democracy, SME development, climate/environment. Shares transition know-how. Challenge Fund engages Polish tech and universities for solutions. Projects in Kenya/Tanzania on health and entrepreneurship.
Czech Republic	CzDA (Czech Dev. Agency)	Eastern Europe, Balkans, Africa (Ethiopia, Zambia), Cambodia	Transition experience, environmental protection, agriculture, social services. Czech-UNDP Partnership provides Czech expertise on SDGs (expanding to Africa/Asia). For example, Czech experts in water/forestry in Moldova and Ethiopia.
Slovakia	SlovakAid (MFA SR)	Eastern Europe (Ukraine, Moldova, Balkans), East Africa (Kenya), MENA (Iraq, Syria)	Democracy and civil society, education, water, energy. Small grants and technical assistance projects. Often co-finances Visegrád4 (V4) joint initiatives in development.
Hungary	Hungary Helps (MFA)	Middle East, Sub-Saharan Africa, Eastern Europe	Humanitarian aid (esp. to persecuted communities, post-conflict reconstruction), water management, health. E.g. building schools/hospitals in Syria and Iraq; water projects in Africa. Ties aid to foreign policy (migration).
Portugal	Camões I.P. (Inst. Coop. and Language)	Lusophone Africa (Mozambique, Angola, Guinea-Bissau, Cabo Verde), Timor-Leste, Brazil (triangular)	Education and Portuguese language, governance, health, rural development. Increasing focus on climate (e.g. renewable energy in lusophone Africa). Lots of academic and cultural exchange with lusophone partners.
Finland	MFA Finland (Dept. for Dev. Policy)	East Africa (Tanzania, Kenya, Somalia, Ethiopia), Asia (Nepal, Myanmar)	Education (quality and access), innovation (digitalization), sustainable forestry, climate and clean energy, gender equality. Finland brings high-tech solutions (e.g. education technology, weather services). Supports initiatives like Energy and Environment Partnership in Southern Africa.
Luxembourg	LuxDev (Luxembourg Dev. Coop.)	West Africa (Sahel: Niger, Mali, Burkina; Senegal), Laos, Nicaragua	Poverty eradication focus – health (HIV/AIDS programs), vocational training, microfinance, renewable energy. Despite small size, contributes to innovative finance (Luxembourg is a hub for green finance funds).
Greece	Hellenic Aid (MFA Directorate)	Balkans (North Macedonia, Serbia), Middle East (Syria, Lebanon), Africa (Egypt)	Historically reconstruction in Balkans; now some focus on refugee support and cultural heritage. Limited infrastructure projects; mostly grants to NGOs and international organizations in region.

Country	Main Agency / Mechanism	Regional Focus	Key Sectors & Initiatives
Cyprus	CyprusAid (MFA)	Near East (Lebanon), Africa (Egypt), small programs	Small-scale projects, often education or scholarships for neighbors. Channels a lot via EU and multilateral organizations.
Malta	Ministry for Foreign Affairs	North Africa (Libya, Tunisia), Sub-Saharan Africa (development education)	Very small program; mostly focused on emergency aid, scholarships, and supporting EU's Africa trust funds.

(Table sources: official ministry and agency strategy documents as cited above; e.g., official statements on focus sectors.)

This overview shows that while approaches differ, **virtually all EU countries include climate and sustainability in their programs**, and many support or are open to **transport-related cooperation** when it fits development needs. Even those without specific transport projects contribute by **funding complementary aspects** – such as training engineers, improving governance (for road safety or maintenance), or financing energy that could later power electric transit.

3.4 Sustainable Transport and Infrastructure in Development Programs

Even though not all programs are explicitly transport-focused, there are numerous **opportunities for collaboration in sustainable road and land transport** across these European initiatives. Sustainable transport aligns with both climate objectives (reducing emissions, promoting public and non-motorized transport) and development goals (improving access to economic opportunities and services). Below we highlight how sustainable transport is being supported and give concrete **example projects** funded by EU or member-state programs.

EU-Level: Under **Global Gateway**, sustainable transport is a core pillar. The EU is **promoting worldwide investments in sustainable, smart, inclusive and safe transport networks**. This includes **green mobility in cities, low-carbon transportation corridors, and upgrading critical infrastructure** to be climate-resilient. The **Trans-Caspian Corridor** investment (Central Asia) cited earlier will modernize rail and road links to cut journey times and emissions. In Africa, the **Global Gateway Africa-Europe Investment Package** is dedicating funds to African transport corridors and urban transport improvements as part of connectivity and trade enhancement. A flagship Global Gateway transport project is the **Dakar Public Transport Network Upgrade**: Team Europe (EU, France, Germany, etc.) joined forces to invest in a Bus Rapid Transit system in Dakar, Senegal, providing an **integrated high-capacity bus network for the city's population**. The project delivers **cleaner buses, dedicated lanes, and modern stations** – expected to significantly reduce commute times and pollution in Dakar. It demonstrates how EU grants (via the European Commission's blending), EIB loans, and bilateral co-financing combine to realize a sustainable transport solution in an African metropolis.

The **European Fund for Sustainable Development Plus (EFSD+)** guarantee is another EU tool facilitating transport investments. For example, EFSD+ guarantees have been used to back EIB loans for **sustainable connectivity projects** – such as modernizing a **West African coastal highway with climate-resilient design**, or financing the **“FAST-Connect” initiative** with AFD for sustainable mobility in fast-growing cities of the Western Balkans. By taking on some risk, the EFSD+ encourages development banks to invest in transport infrastructure that benefits development but might be seen as too risky otherwise.

Member States and Bilaterals: Many bilateral donors also explicitly or implicitly fund sustainable transport:

- **France (AFD)**, as noted, is financing mass transit systems (metros, BRTs, tramways) in cities from **Dar es Salaam to Bogotá**. The **Dar es Salaam BRT Phase 5** project is one example where AFD's €178 million loan will help move an estimated 400,000 passengers per day on clean buses, integrating routes across the city. In **Morocco**, AFD supported the **Rabat-Salé tramway**, improving urban mobility with electric-powered trams (a project aligning with Morocco's low-carbon development plans).
- **Germany (BMZ/GIZ/KfW)** supports partner countries in developing **Nationally Determined Contributions (NDCs)** that include transport sector mitigation. Through GIZ's **TRANSfer project** (funded by BMZ and others), Germany has helped countries like China, Indonesia, Kenya, and Peru design transport strategies (like e-mobility roadmaps, BRT systems, or fuel economy standards) and then linked them to financing. KfW has financed **geothermal-powered electric rail lines in Ethiopia** and **solar street lighting in West African cities**, bridging climate and transport.
- **Nordic donors** often contribute to transport via climate or urban initiatives. For example, **Sweden** through Sida co-funded the **MobiliseYourCity partnership**, which supports sustainable urban mobility plans in 30 developing cities (with France, EU, and Germany). **Denmark**, via DSIF, provided soft financing for a **Bus Rapid Transit system in Colombo, Sri Lanka** in the past and is exploring funding for **electric ferries in island nations** (mixing Danish green tech with development). **Finland** supported the introduction of **biofuel buses in Kathmandu, Nepal** through a energy/environment partnership.
- **The Netherlands** has a program called **ORIO/DRIVE** (Infrastructure Development Fund) which has funded **feeder roads in Uganda** and **bridge construction in Ghana**, ensuring those infrastructures are climate-proof and include community input. Dutch expertise in cycling has also led to knowledge exchange – e.g. Dutch experts advised cities like Bogotá and Jakarta on improving bicycling infrastructure as a low-cost, sustainable transport mode (often through NGO projects funded by Dutch embassies).
- **Eastern European donors** like Poland and Czech Republic contribute in niche ways: e.g. **Poland** gave co-financing for **road safety improvements in Moldova** (signage, traffic law enforcement training) given Poland's successful road fatality reduction at home; **Czech Republic** helped **Bosnia and Herzegovina** draft a **transport strategy** by sharing its EU accession experience in transport regulation (via the Czech-UNDP Trust Fund). These may not be big-ticket items, but they demonstrate know-how sharing.
- **Multilateral and Team Europe Projects:** Often, EU member states pool funds in large programs managed by multilateral development banks for infrastructure. For instance,

EU Member States contribute to the African Development Bank's Africa50 Infrastructure Fund (which finances highways, railways, etc. in Africa) and to the **World Bank's Global Road Safety Facility** to reduce traffic injuries in low-income countries. A **Team Europe Initiative on Sustainable Connectivity** might see, for example, **Sweden and Germany co-fund rural road rehabilitation in Ethiopia** while the EU and France co-fund an inter-city rail line, under a coherent strategy.

Example Projects related to Sustainable Transport:

- **Zambia–Tanzania Railway and Road Upgrade:** Under Global Gateway and G7 PGII, the EU and European countries are backing improvements to the **Zambia–Tanzania transport corridor**, including rail upgrades and feeder road rehabilitation, to boost regional trade and allow a shift of freight from road to rail (reducing emissions and costs). In 2025, the Zambia-Tanzania Interconnector was launched with EU support – primarily an energy project, but closely tied to improved cross-border infrastructure. The improved connectivity is expected to spur investment along the corridor and is complemented by **Team Europe's focus on Southern Africa's infrastructure**.
- **Nairobi, Kenya: Green BRT** – The EIB with France and Germany is preparing financing for a **BRT system in Nairobi** that will use electric buses. This is part of a **Team Europe Green Mobility Initiative** in Kenya, which also includes technical assistance funded by the EU to plan routes and integration with walking/cycling. The initiative aligns with Kenya's climate commitment to lower transport emissions. (This is referenced in press releases around Global Gateway, though not cited above explicitly.)
- **Latin America EV Public Transport:** Through a regional EU Latin America program (LAIF – Latin America Investment Facility), the EU and Spain have funded pilot projects for **electric bus fleets in cities like Santiago (Chile) and Montevideo (Uruguay)**. These pilots helped demonstrate viability and were followed by larger loans from IDB or CAF (to which European countries contribute capital) to scale up e-buses, bringing cleaner air and knowledge transfer about EV maintenance.

These examples highlight that **sustainable road and land transport projects are indeed being funded and facilitated** under European development programs. They are **open to collaboration**: developing country governments, European agencies, private sector technology providers, and local communities all have roles. For instance, a city wanting to develop a BRT can partner with GIZ for planning (German technical aid), get a loan from AFD or EIB for infrastructure, receive an EU grant to cover feasibility studies, and involve a local university in monitoring social impacts – a truly collaborative approach.

It's also worth noting the **policy influence** dimension: European donors often support policy reforms and capacity building that enable sustainable transport. Examples include advising on **fuel subsidy reforms** (so that public budgets can fund public transport instead of cheap fuel), helping draft **national transport policies** that prioritize maintenance of existing roads and promotion of public transit, or training city officials in **urban mobility planning** (as in the EU-funded **CODATU training programs** in West Africa). Such “soft” support is an important complement to the physical projects.

3.5 Academic Collaboration and Innovation in Development Cooperation

Academic collaboration is a powerful enabler of innovation in development cooperation. By linking universities, research institutes, and educational exchanges with development projects, the EU and member states help build the human capital and knowledge needed to drive sustainable development. These collaborations manifest through **scholarship and exchange programs, joint research initiatives, and institutional partnerships**. They not only strengthen education and research in developing countries but also create networks for sharing innovative solutions – thereby amplifying the impact of development programs (including those in transport and infrastructure).

3.5.1 EU-Funded Academic and Research Initiatives

Erasmus+ (International): The EU's Erasmus+ programme, while primarily known for intra-European student mobility, has a significant international dimension funded partly via NDICI. It supports **student and staff exchanges between European universities and those in Africa, Asia, Latin America, and other regions** (International Credit Mobility), as well as **Capacity Building projects in Higher Education** that fund partnerships to modernize curricula or governance in universities in developing countries. Erasmus+ (2021–2027) aims to reach **over 4 million people** globally through mobility and cooperation actions. For example, an Erasmus+ Capacity Building project might connect universities in Europe with ones in South-east Asia to develop a **master's program in sustainable transport engineering**, exchanging faculty expertise and updating course content to include green mobility concepts. Such a project produces graduates equipped to implement innovative transport projects back home.

Additionally, **Erasmus Mundus Joint Masters** offer fully funded master's degrees in Europe for students worldwide (many from developing countries), often in fields aligned with development (e.g. sustainable urban planning, environmental engineering). These alumni frequently become change-makers in their countries. The **Intra-Africa Academic Mobility Scheme**, co-funded by the EU and African Union, is another program facilitating exchanges among African universities (with EU technical support) to boost regional academic capacity in areas like **transport economics or climate science**.

Horizon Europe and Research Cooperation: The EU's Horizon Europe research framework has opened many of its calls to global collaboration. It explicitly seeks to **“strengthen the impact of research and innovation in tackling global challenges”** and supports international consortia. There are specific Horizon Europe initiatives with Africa – for instance, the **AU-EU High-Level Policy Dialogue on Science, Technology and Innovation** led to a **joint AU-EU Innovation Agenda adopted in 2023**, which outlines priority areas for Africa-Europe research partnerships (such as public health, green transition, innovation capacity). The EU is funding **Africa-Europe “Clusters of Research Excellence”** in collaboration with networks like the African Research Universities Alliance (ARUA). These clusters encourage collaborative research teams tackling issues like renewable energy, sustainable agriculture, or digital innovation – whose outputs can inform development projects and policies (for example, research on drought-resistant crops can shape agricultural development programs).

A concrete example bridging research and transport is the EU-supported **SOLUTIONSplus** project (under Horizon 2020) which created a global platform of cities, industry and academia to pilot e-mobility solutions in cities on four continents (e.g. electric minibuses in Nairobi, e-scooters in Kigali, e-bike sharing in Hanoi). European and local universities were heavily involved in monitoring these pilots and extracting lessons for wider use. This demonstrates how EU research funds can seed innovative transport projects in a development context, with academics playing a key role in innovation and evaluation.

Marie Skłodowska-Curie Actions (MSCA) within Horizon also foster academic collaboration by funding research fellowships and staff exchanges globally. For instance, **MSCA RISE** projects allow research staff exchanges between Europe and developing countries. A RISE project might connect a European transport research center with universities in, say, Brazil and Ghana to research urban mobility data – staff rotate and jointly develop open-source tools that city authorities (possibly via development projects) can later use for planning.

EDCTP and others: In health research, the **European & Developing Countries Clinical Trials Partnership (EDCTP)** is a long-running program co-financed by the EU and several member states, partnering with African researchers to develop medical solutions for diseases in Africa. While health-focused, it exemplifies the model of co-ownership between European and developing country scientists. Similar collaborative platforms could be and are being used in energy, climate and infrastructure research.

Capacity4Dev and Knowledge Sharing: The EU also hosts platforms like **Capacity4Dev** (an online knowledge-sharing hub) and funds **knowledge transfer programs**. These often involve academia; for example, the **Kapuscinski Development Lectures** (named after a Polish journalist) are an EU-supported series of lectures where top academics speak in developing countries on development topics, stimulating debate and learning.

3.5.2 Member State Academic Collaboration Initiatives

Individual European countries complement EU initiatives with their own academic cooperation schemes, often aligned with their development priorities:

- **Germany:** The German Academic Exchange Service (**DAAD**) runs a dedicated program for **Development-Related Postgraduate Courses (EPOS)**, offering scholarships to students from developing countries to pursue development-relevant master's degrees in Germany (in fields like infrastructure engineering, environmental management, etc.). BMZ funds these as part of capacity-building – the idea being the graduates return with skills to drive projects locally. Germany via DAAD and Alexander von Humboldt Foundation also has programmes for **research cooperation**: e.g. DAAD's **Centres of Excellence for Development Cooperation** (exceed program) established centers at African and Asian universities focusing on climate change, law, health, etc., in partnership with German universities. One such center is the "Centre for Logistics and Transportation" at the University of Dar es Salaam (supported by a German university), which works on research and training in sustainable transport and logistics in East Africa. These centers not only train students but also provide advice to governments – bridging academic insight with development practice.

Furthermore, Germany's **Helmholtz and Fraunhofer Institutes** have begun collaborations abroad – for instance, Fraunhofer jointly with GIZ set up applied research units in South Africa on solar energy (which indirectly supports electrification that could be used by e-vehicles). Such North-South institutional twinning is a trend.

- **France:** Through **Campus France** and programs like the **Eiffel Scholarships**, France attracts top students from developing countries (with many recipients from Africa, Asia, Latin America) into its universities for fields including science and engineering. France also has **IRD (Institute of Research for Development)** and **CIRAD**, research institutes that specialize in development-oriented research (IRD focuses on everything from epidemiology to sociology in the Global South; CIRAD on agriculture). These institutes operate via partnerships in developing countries – IRD researchers are often embedded in universities in West Africa or Southeast Asia, working jointly on issues like climate adaptation or urban development. Their findings often feed into French development projects or international programs. For example, IRD's climate scientists in Senegal might contribute to designing a coastal road protection project funded by AFD.
- **UK (though not EU anymore)** and other European countries like **Norway, Switzerland** (not EU members) also have strong academic collaboration schemes, which interact with EU efforts. (UK's exit has created some gap in European academic programs, but the UK is setting up its own schemes; still, UK and EU often coordinate in-country.)
- **Other EU countries:** Many have scholarship schemes: **Sweden** (the Swedish Institute Study Scholarships for global professionals, many from Africa/Asia), **Netherlands** (Orange Knowledge Programme, offering training and Masters in Dutch institutions for developing country professionals in fields like water management, logistics, etc.), **Belgium** (ARES scholarships for Francophone Africa), **Hungary** (Stipendium Hungaricum offering scholarships to developing country students, e.g. from Eastern Europe, Asia, Africa). These educational opportunities create a cadre of skilled professionals in partner countries – some of whom go on to work in government ministries, NGOs, or start innovative businesses, multiplying the development impact.

Additionally, some countries fund **joint research projects**: e.g. **Austria** has an APPEAR program linking Austrian and developing country universities on research; **Poland** and **Czech Republic** have small grant schemes for joint scientific projects in Eastern Europe or Africa.

Academic collaboration also takes the form of **mobility of experts** in development projects. For instance, **Japan** and European donors fund the **African Business Education (ABE) Initiative** to bring African graduates to learn managerial skills, hoping they later lead development in infrastructure sectors – an example of cross-donor academic effort.

3.5.3 Academic Collaboration as an Enabler of Innovation

Academic partnerships bolster innovation in development cooperation in several ways:

- **Human Capital Development:** By training individuals (through scholarships, exchanges, joint degrees), academic programs produce engineers, urban planners, researchers, and policy experts who are critical for innovating and sustaining

development projects. For example, an engineer who obtained a Master's in highway engineering in Europe might return to their home country and introduce new techniques for road design (like climate-resilient pavements or traffic management systems). These skills ensure that infrastructure investments under cooperation programs are well designed and maintained.

- **Research and Evidence:** Universities and research institutes provide the data and analysis that inform development solutions. Collaboration allows for **joint research on local problems** – for instance, European and African scientists researching which pavements last longer under local climate stresses, or studying commuting patterns in a developing city to advise on a public transport route. Such evidence helps donors and governments make informed decisions, thus improving project effectiveness. With climate change creating new challenges, research collaboration is vital to innovate (e.g. developing asphalt mixes that withstand higher temperatures or flooding – something a EU–Asia research project might tackle, yielding innovation for road projects funded by development banks).
- **Technology Transfer:** Academic projects often involve developing new technologies or adapting existing ones to local context. Examples include developing a low-cost air pollution sensor network by a university collaboration – which can then be deployed in a city via a development project to monitor traffic emissions and guide transport policy. Or a joint innovation lab on solar-powered mini-grids (university-run) that pilots powering remote highway rest stops or telecommunication towers along rural roads. By testing in academic settings, these technologies become ready for scale-up by development programs.
- **Institutional Strengthening:** Partnerships help improve curricula and management of universities in developing countries, turning them into local centers of expertise that governments and industry can tap. For example, if a country establishes a strong Department of Transportation Engineering at a local university (with help from EU universities through an Erasmus+ project), that department can train the transport ministry's staff, provide consultancy on projects, and serve as a think tank. This local capacity is far more sustainable in the long run than reliance on external consultants.
- **Networks and South-South/North-South Links:** Academic collaboration builds networks of trust and knowledge. Alumni of European universities in different countries form networks (like the “Erasmus Mundus alumni” or “UK Chevening alumni”) which often collaborate across borders later. This can facilitate **South-South cooperation** – e.g. an Indonesian and a Kenyan who studied together in a European program might later collaborate to transfer a solution from Indonesia to Kenya or vice versa, independent of their European partners. The EU's programs explicitly encourage creating such global communities.
- **Innovation in Policy:** Scholars often play a role in policy advocacy. A PhD graduate who researched road safety might join their country's transport ministry and push for evidence-based reforms (e.g. helmet laws, speed limits, better road design standards). Thus, the fruits of academic inquiry can become innovations in governance and policy frameworks, which donors like EU and member states strongly support (policy reform is a common conditionality or complementary measure in development cooperation).

One compelling example of academic collaboration driving innovation is the **Leapfrogging transport technology** project (hypothetical scenario): Suppose European and African

universities team up to test **electric cargo bikes for rural areas** (to replace motorcycle taxis that are costly and polluting). They run trials in a few villages (with grant funding). The results show these e-bikes can significantly ease transport burdens for women entrepreneurs. Seeing this, an EU development program or a member state (say the Netherlands, known for bikes) can scale it up through a larger rural mobility project, providing financing and training based on the pilot evidence. Without the initial academic experiment, the idea might not have been proven or adopted.

Team Europe – Academic synergy: Increasingly, academic collaboration is being integrated into “Team Europe” initiatives. For example, a **Team Europe Initiative on Green Transition in Africa** might include a component where European and African research institutes work on hydrogen fuel technology suitable for African transport (like green hydrogen buses), alongside the infrastructure investments. This ensures that know-how is transferred and local capacity exists to operate and maintain the innovation.

Finally, academic collaboration contributes to **sustainability** of development efforts by creating **local ownership of knowledge**. Instead of being purely aid recipients, developing country institutions become co-creators of solutions. This empowerment is essential for innovation – local researchers and students often have insights that external experts lack, leading to more appropriate and innovative solutions. Europe’s role, through these collaborations, is often to facilitate resources, mentorship, and global exposure.

3.5.4 Notable Academic Initiatives Linking to Development

- **AU-EU Innovation Agenda (2023):** As mentioned, the AU-EU Agenda sets a framework for equitable R&I partnerships. It envisions universities and innovation hubs working on **public health, green transition, innovation capacity, and interconnectivity**. One of its pilot actions is establishing **Africa-Europe Innovation Centers** that pair European technical universities with African universities to work on climate-smart city planning. Such centers could churn out pilot projects (e.g. a smart traffic light system powered by AI in Nairobi) that can later be scaled by development funding.
- **EU Support to Higher Education in ACP:** The EU funded programs like **EDULINK** (for African, Caribbean, Pacific university networking) and **Intra-ACP academic mobility**. For instance, EDULINK funded a partnership to develop a **regional Master’s in Road Engineering in Southern Africa**, standardizing training across several countries. Graduates from this program have been absorbed into national road agencies, bringing a common standard of practice.
- **Knowledge Triangle Initiatives:** Some EU projects explicitly try to link education, research, and innovation (“knowledge triangle”). For example, an EU project in Asia might connect a technical university (education), a research institute, and small businesses (innovation) to work on sustainable transport solutions (like converting farm waste to biofuel for vehicles). This integrative approach ensures that innovations are practically tested and taught to next generations.

In conclusion, academic collaboration is not a side-note but a **central pillar enabling innovation** in European development cooperation. It strengthens the “**software**” (**human skills and knowledge**) that complements the “**hardware**” (**infrastructure and financing**). Whether

through educating skilled professionals, generating research-based evidence, fostering technology transfer, or strengthening institutions, these collaborations multiply the impact and longevity of development programmes.

The EU and its member states clearly recognize this: nearly every major development strategy document references the importance of knowledge and learning. For example, the **European Consensus on Development (2017)** highlights research and innovation as key drivers for sustainable development, and NDICI explicitly allocates funds to **Erasmus+ and research cooperation**. By continuing to invest in academic partnerships – from basic research to vocational training – Europe helps ensure that innovative solutions (in transport and beyond) emerge from within partner countries themselves, leading to a virtuous cycle of development.

3.6 Conclusion: Europe's development cooperation landscape

Europe's development cooperation landscape is broad and dynamic, spanning EU-level instruments and a mosaic of national programs. Collectively, the EU and its members are aligning their initiatives with global goals – eradicating poverty, tackling climate change, and fostering inclusive growth. We have seen that all 27 EU member states, whether large or small donors, contribute to these aims through various programmes: some bring massive financing for infrastructure, others contribute niche expertise or regional focus, and all together under the “Team Europe” banner they strive for synergy.

Opportunities for **sustainable road and transport collaborations** abound. From the EU's Global Gateway mega-plan to a small bilateral project improving rural roads, the emphasis is increasingly on sustainability – meaning transport systems that are **economically viable, socially inclusive, and environmentally friendly**. Example projects like the **Dakar BRT, Dar es Salaam BRT, Central Asia Corridor** and others illustrate that investments in transport are being designed not just to move people and goods, but to do so in ways that reduce emissions, improve safety, and connect the poor to opportunities. These projects are often **open to partnerships** – involving local stakeholders, the private sector, and knowledge institutions.

Academic and research collaboration has emerged in this analysis as a **key enabler of innovation**. By empowering people through education and joint research, the EU and member states help create the conditions for development solutions to take root and evolve. The interplay between academic programs and development cooperation means that **today's scholarship recipients or research partners are tomorrow's project leaders and innovators**. For example, an academic who participated in an EU-supported research on electric mobility might later lead their city's e-bus rollout with donor funding – bridging lab to real-world implementation.

Looking ahead, the **current and upcoming programmes** (2021–2027 and beyond) place Europe on a path to deepen these synergies. Initiatives like **Global Gateway** will likely expand partnerships with the private sector for infrastructure; NDICI will continue to drive integrated approaches (blending grants, loans, guarantees for impact); and new strategies (like each

donor's climate strategy or the AU-EU Innovation Agenda) will push the envelope on linking climate action, innovation and development.

For stakeholders in sustainable transport – whether developing country governments, European industry, or civil society – the European programs offer numerous entry points: policy dialogue, funding opportunities, technical cooperation, capacity building, and research partnerships. A program need not be explicitly “transport” to be relevant; many climate, urban, or academic programs can be leveraged to support sustainable mobility goals.

Europe's development cooperation ecosystem is comprehensive: EU institutions and all 27 member states working in concert (through “Team Europe”) or individually, deploying financial resources, knowledge, and partnerships. Their programs in Asia, Africa, and Latin America are increasingly interconnected – bridging hard infrastructure and soft capacity, immediate needs and long-term research, public and private players. This integrated approach is well suited to address complex challenges like building sustainable transport systems or combating climate change, which require not just money but also innovation, education, and collaborative effort.

By covering all EU members and the EU level, this report demonstrates a unified commitment to global development, while also respecting diverse expertise. The European approach – combining development cooperation, international climate action, and academic collaboration – is poised to continue enabling innovation and delivering results on the ground, ensuring that roads, rails, and research together pave the way for a more sustainable and connected future in partner countries.

Sources:

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- Czech-UNDP Partnership – Sharing Czech expertise via SDG partnership
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- European Commission – Erasmus+ reach
- SwissCore – AU-EU Innovation Agenda adoption

4 Synergies between research and implementation programmes

4.1 Introduction

The transition to sustainable and zero-emission mobility in emerging markets is a complex challenge that requires more than just innovative research or isolated implementation efforts. It demands a seamless integration of the two—where research outputs inform practical solutions, and implementation programs provide feedback to refine and adapt research. European research programs, such as Horizon Europe, have laid a strong foundation for advancing innovation in clean transport, while national and regional programs in Africa, Asia, and Latin America are increasingly focused on deploying these solutions to address local challenges.

In this section, we explore how these research and implementation programs complement each other, creating opportunities to accelerate the adoption of innovative solutions. The section also identifies gaps and opportunities to strengthen these linkages, ensuring that research outputs translate into tangible impacts on urban air quality, climate change, road safety, and zero-emission mobility.

4.2 European R&I Programmes and the Regional Implementation Programmes

European research programs have long been at the forefront of advancing sustainable mobility, offering a robust framework for innovation and collaboration. Horizon Europe, for instance, has supported groundbreaking projects like SOLUTIONSplus, which piloted locally appropriate electric mobility solutions (e.g. electric buses, e-scooters, and charging solutions) in cities across Africa, Asia, and Latin America. These projects are not just about testing technologies; they are about co-developing solutions with local stakeholders, ensuring that the innovations are both contextually relevant and scalable.

Another key initiative is the Global Gateway, which focuses on infrastructure investments, including urban mobility projects in emerging markets. By promoting sustainable transport corridors and regional connectivity, the Global Gateway aligns closely with the priorities of many developing economies. Similarly, European partnerships like ERTRAC and also the Clean Hydrogen Partnership are advancing strategic roadmaps and technologies that can be adapted to the needs of emerging markets. These programmes emphasize the importance of linking research outputs with implementation pathways, creating an important foundation for collaboration with national and regional initiatives.

In parallel, national and regional programs in Africa, Asia, and Latin America are making significant steps in implementing sustainable mobility solutions. In Africa, for example, Kenya's national e-mobility strategy is a standout case, integrating renewable energy with EV charging infrastructure to create a sustainable transport ecosystem. South Africa, on the other hand, is leveraging its automotive assembly hubs to pivot toward EV production, supported by

government incentives and partnerships with European stakeholders. At the regional level, initiatives like the Africa-EU Transport Task Force are promoting connectivity and sustainable transport corridors, aligning with European research priorities.

Asia presents a similarly dynamic landscape. India's National Electric Mobility Mission Plan (NEMMP) has been instrumental in driving EV adoption through subsidies and infrastructure development, while Vietnam's private sector, led by companies like VinFast, is emerging as a leader in EV manufacturing. These efforts are complemented by regional initiatives like the Asian Transport Observatory (ATO), which provides data and insights to guide sustainable mobility policy-making.

In Latin America, countries like Chile and Colombia are leading the way. Chile's national electromobility strategy, which targets 100% electric public transport by 2040, is supported by innovative financing models that could serve as a blueprint for other economies. Meanwhile, Bogotá's electric bus fleet, one of the largest in the region, demonstrates the potential for scaling public transport electrification. Regional initiatives like the Latin America Investment Facility (LAIF) further enhance these efforts by co-financing EV and public transport projects, creating synergies with European funding mechanisms.

4.3 Synergies between Research and Implementation

The interplay between research and implementation programs is where the real potential for transformation lies. EU research programs, with their emphasis on innovation and capacity building, provide the tools and frameworks needed to address complex challenges. Then, the national and regional programs that bring these tools to life, adapting them to local contexts and ensuring their practical application.

Our analysis reveals several areas where research and implementation programs can complement each other to accelerate the transition to sustainable mobility:

1. **Policy alignment and capacity-building.** European research programs like Horizon Europe can support the development of national policies and capacity in emerging markets, ensuring that they are informed by the latest scientific insights. As an illustration, aligning EU-funded research with national e-mobility strategies in Africa, Asia and Latin America can help address local needs while leveraging global best practices and lessons learned.
2. **Technology transfer and innovation** is another critical area of synergy. European experience in EV technology and digital mobility platforms can be leveraged to support local innovation ecosystems. Collaborating with private sector leaders (e.g., VinFast in Asia) and upcoming local innovators could demonstrate how European research can support the scaling of EV manufacturing in emerging markets.
3. **Integrated planning and regional connectivity** also benefit from these synergies. European research on concepts like Transit-Oriented Development (TOD) can inform regional implementation programs, ensuring that urban planning and transport investments are aligned. For instance, the Africa-EU Transport Task Force is already leveraging European research to support sustainable transport corridors across the continent.

4. **Knowledge exchange** is at the heart of these synergies. Programs like SOLUTIONSplus and MobiliseYourCity provided platforms for sharing best practices and fostering partnership through the many exchanges had and through the network created. Whether it's facilitating peer learning between cities in Latin America and Europe or co-developing solutions with local stakeholders, these initiatives exemplify the nature of collaboration.
5. **Financing mechanisms** continue to be one of the most significant synergies. Blended financing models (e.g., EFSD+ guarantees) can de-risk private investments in sustainable transport projects. One example is the co-financing of e-bus fleets in Latin America through partnerships with regional development banks.

4.4 Challenges and Recommendations

While significant progress has been made, several challenges remain in bridging the gap between research and implementation. Fragmented governance often hinders integrated planning, as sectoral silos and weak coordination mechanisms make it difficult to align research and implementation efforts. Financial constraints are another significant barrier, particularly for informal operators and small-scale projects that struggle to access financing mechanisms. Also, data gaps, especially in areas like informal transport and road safety, limit the ability to make informed decisions.

To address these challenges, it is essential to consider the following:

1. Strengthen coordination mechanisms between research and implementation stakeholders to ensure alignment of priorities.
2. Expand capacity-building programs to bridge technical expertise gaps, particularly in EV manufacturing and infrastructure deployment.
3. Tailored financing mechanisms are also needed to support informal operators and small-scale projects, ensuring inclusivity.
4. Finally, investing in data collection and monitoring systems will be critical to tracking progress *and* informing decision-making.

The synergies between research and implementation programs present an opportunity to accelerate the transition to sustainable mobility in emerging markets. By aligning research outputs with implementation pathways, leveraging financing mechanisms, and fostering innovation, these programs have the potential to address the systemic challenges and even unlock new opportunities for collaboration. The findings here provide a roadmap for strengthening these synergies and ensuring that research, policy, and business perspectives are integrated to achieve global sustainability goals.

5 One System, Many Actors

5.1 Introduction and Context

Sustainable land transport is a cornerstone of climate action, economic growth, and social inclusion in developing regions. Africa, Asia, and Latin America face an urgent need to decarbonize road and rail systems while expanding access to mobility for booming urban populations and underserved rural communities. This challenge coincides with the European Union (EU) and its Member States scaling up external partnerships through a range of instruments – from the EU's *Global Europe* development budget to bilateral aid agencies and even sub-national cooperation. The premise of “One System, Many Actors” is that these diverse European initiatives can form a **mutually reinforcing architecture** to finance, pilot, scale, and govern inclusive low-carbon transport transitions in partner countries. Aligning these actors is pivotal to meeting the 2030 Agenda and Paris Agreement goals: transport emissions are growing rapidly, especially due to increased vehicle use in developing cities, yet sustainable alternatives can deliver huge co-benefits in cleaner air, safer mobility, and new green jobs.

Problem Statement: Today, the landscape of external support for sustainable transport is fragmented. Developing cities often grapple with multiple, uncoordinated donor programs – for example, separate feasibility studies for a bus system funded by different agencies – which can stretch local capacity and dilute impact. At the same time, certain sectors (e.g. electrified public transport, non-motorized modes, green freight) remain underfunded relative to needs. The period 2021–2030 offers a critical window to address these gaps by leveraging Europe's combined instruments as a coherent system. The EU's new financing framework NDICI–Global Europe (2021–2027) provides nearly €80 billion and a *Team Europe* approach stressing joint action. Member-state agencies like **GIZ** (Germany), **AFD** (France), **Sida** (Sweden), **Danida** (Denmark), **FMO** (Netherlands), and **Enabel** (Belgium) bring deep sector expertise and long-standing bilateral ties. Additionally, European regional and city governments are increasingly active in decentralized cooperation, sharing technical know-how on urban mobility planning and transit operations. If these actors collaborate strategically – aligning financing, technical assistance, and policy support – they could dramatically accelerate sustainable transport transformations in the Global South.

Objective of the Report: This report provides a comprehensive deep-dive into how European instruments at **three levels** – EU-level programs, national bilateral agencies, and sub-national partnerships – can be coordinated to catalyze low-carbon road and rail transitions in Africa, Asia, and Latin America over 2021–2030. The analysis is structured in five main parts, addressing:

1. **Mapping the Landscape of Programs and Actors:** An overview of key EU initiatives (e.g. NDICI–Global Europe, Global Gateway, Horizon Europe, Erasmus+, EFSD+), leading bilateral agencies (e.g. BMZ/GIZ, AFD, Sida, Danida, FMO, Enabel), and regional actors (German *Länder*, French *régions*, Spanish CCAA, Dutch provinces, etc.), including their mandates and transport-related portfolios.

2. **Flows and Intersections:** How funding flows overlap or intersect – joint financing arrangements, shared technical platforms, regional concentration of efforts, and identification of thematic or geographic gaps. We examine the mechanisms of *Team Europe Initiatives*, blending facilities, and partnerships like **MobiliseYourCity** that pool resources for urban mobility planning.
3. **Impact Pathways and Bottlenecks:** An assessment of what has worked in practice (illustrated by examples where synergies delivered measurable impact) and persistent barriers that inhibit alignment (such as differing procedures, visibility concerns, or local absorptive capacity constraints). Impact pathways are traced through case studies and project evaluations, highlighting enabling factors and obstacles.
4. **Upcoming Opportunities (2025–2030):** Identification of emerging opportunities to deepen coordination – including new funding windows (e.g. Global Gateway flagship investments, mid-term NDICI allocations, green recovery funds), priority regions, and high-impact subsectors. Particular transport modes and approaches – from **Bus Rapid Transit (BRT)** and rural **feeder roads** to **transit-oriented development (TOD)**, **green freight** corridors, **electric mobility (e-mobility)** and **Mobility-as-a-Service (MaaS)** platforms, and **gender-responsive transport** initiatives – are analyzed for their potential and current support levels.
5. **Governance Models for Alignment:** Review of models such as the **Team Europe** approach (joint programming and co-financing by EU and Member States), **delegated cooperation** (one donor implementing on behalf of others), **research–implementation pairings** (linking EU-funded R&D pilots to development finance for scaling), and **city-to-city cooperation**. We explore how governance and coordination structures can be optimized to ensure the “one system” operates effectively across many actors.

Methodology: The report synthesizes evidence from at least 120 primary sources, including official program strategies, funding data, evaluations, and academic studies. It incorporates **finance-tracking of 10 detailed project examples** where joint funding was applied, and develops **6 in-depth case studies** (2 in Asia, 2 in Africa, 2 in Latin America) of cities that have pioneered sustainable transport solutions with European support. These case studies – in Kigali, Dar es Salaam, Hanoi, Pasig, Quito, and Montevideo – each present a timeline of interventions, stakeholder roles, funding sources, and outcomes. Comparative tables and figures are used throughout to distill information (e.g. donor instrument matrix, investment flows, timeline charts). The analysis is supplemented by anonymized insights from expert discussions in the project Task Forces In Kigali, Quito and Manial (urban planners, donor officials, local project managers) to capture on-the-ground perspectives. Finally, three forward-looking **2030 scenarios** (optimistic, business-as-usual, fragmented) are constructed to illustrate the stakes of coordination, and a set of prioritized actions is recommended.

This report serves as a roadmap for policymakers, city leaders, international financiers, and program designers to **orchestrate a coherent, multi-level approach** – leveraging EU-level resources, bilateral know-how, and local partnerships – in order to dramatically scale up sustainable road and rail transport solutions across developing countries by 2030.

5.2 Mapping the Landscape: EU-Level, National, and Sub-National Programs

European support for transport in developing regions spans a complex web of instruments. At the top, the EU itself – through its budget and institutions – provides large-scale financing and policy initiatives. At the national level, individual Member States operate their own development cooperation agencies and finance institutions, often specializing in certain niches or regions. Additionally, sub-national authorities (provinces, regions, cities) engage in decentralized development cooperation, sharing technical expertise or twinning with counterparts abroad. This section maps the major actors and programs at each level, highlighting their objectives, scale, and relevance to sustainable road/rail mobility.

5.2.1 EU-Level Programs and Initiatives

EU Institutions & NDICI–Global Europe: The Neighbourhood, Development, and International Cooperation Instrument – **Global Europe (NDICI)** – is the EU’s flagship external funding instrument for 2021–2027. With an overall allocation of **€79.5 billion**, NDICI–Global Europe subsumes several previous tools into one, covering cooperation with all third countries (except enlargement and overseas territories). Table 1 summarizes the key components of NDICI and related EU-level programs relevant to transport.

Table 2: Major EU-Level Instruments for External Transport Support (2021–2027)

Instrument	Managed By	Budget (2021–27)	Transport-Related Focus	Notable Features
NDICI–Global Europe	European Commission (DG INTPA)	€79.5 billion (geographic & thematic)	Infrastructure (roads, rail) via country programs; thematic funds for climate/urban mobility	Merges multiple funds into one; flexible “cushion” for new priorities ; 30% climate target
Global Gateway (EU Strategy)	European Commission / EEAS	Target to mobilize €300 billion by 2027	Invests in digital, energy, transport connectivity; focus on sustainable infrastructure and value chains	Not a fund itself, but a strategy leveraging NDICI grants, EFSD+ guarantees, EIB/EBRD, private capital ; emphasizes high standards and local benefits
EFSD+ (European Fund for Sustainable Development Plus)	European Commission (DG INTPA)	Up to €53.4 billion guarantee	Risk-sharing for investments via guarantees and blending – e.g. backing development bank loans for transport projects	Integrated in NDICI; extends EIB’s External Lending Mandate; enables blended finance and private sector mobilization (e.g. guarantees for urban transit PPPs)
Horizon Europe (Global Part)	European Commission (DG RTD)	€95.5 billion (total R&I), ~€0.5 billion for mobility innovation globally	R&D and innovation on green mobility (e.g. electric vehicles, smart mobility) including	Research–implementation link: funds projects like SOLUTIONSplus that pilot e-mobility solutions in developing cities

			demonstrators in partner cities	
EFSD+ Blending Facilities	European Commission / EIB	(Part of NDICI – amounts vary by region)	Grants to blend with loans for infrastructure (e.g. African Transport Connectivity Fund)	Successor to EU Africa Infrastructure Trust Fund; co-finances corridors, BRT systems, rail rehab by combining EU grants + MDB loans
Erasmus+ (International)	European Commission (DG EAC)	€26.2 billion (total), int'l window ~€2.2 billion	Capacity building and academic exchange, including transport engineering and urban planning programs	Funds joint master's programs, technical training (e.g. sustainable mobility courses for city officials); fosters people-to-people links
European Investment Bank (EIB) Global	EIB (EU's bank)	Mandate under NDICI guarantee (up to €26.7 b in Africa, etc.)	Major lender for transport projects: urban transit, rail corridors, airports, ports (often co-funded with EU grants)	Now operates "EIB Global" branch for development; often leads large sovereign loans (e.g. Quito Metro: EIB €200m ; Dakar Bus Network: EIB €167m with EU guarantee)

Sources: European Commission NDICI factsheets, EIB reports, programme regulations.

In broad terms, **NDICI–Global Europe** provides the bulk of EU grant funding, including geographic programs in sub-Saharan Africa (~€29.2 billion) and Asia/Pacific (~€8.5 billion). Within these, sustainable transport may appear as part of national indicative programs (often under climate-resilient infrastructure). NDICI also unifies **blending and guarantee** operations via the EFSD+ mechanism. As Commissioner Jutta Urpilainen noted, this integration allows the EU to “strategically promote public and private investment worldwide in support of sustainable development”. For instance, the EU mobilized the EFSD+ guarantee to enable a €167 million EIB loan for Dakar’s bus network renewal – a project showcasing Global Gateway in action.

The **Global Gateway** initiative, launched in late 2021, is an umbrella strategy aligning EU and Member State resources toward connectivity projects. It specifically highlights **transport corridors** in Africa, aiming to develop eleven strategic land transport corridors (multi-country road and rail networks) that mirror the EU’s own TEN-T approach. These corridors are meant to boost trade, create jobs, and improve regional integration by linking ports, cities, and hinterlands across borders. For example, the “**Abidjan–Lagos Corridor**” in West Africa and the “**Dar es Salaam–Nairobi–Addis Ababa**” corridor in East Africa are flagged under Global Gateway for upgrades with Team Europe support. Table 2 provides an overview of a few priority corridors and the joint financing envisaged:

Table 3: Sample Global Gateway Strategic Corridors in Africa and Team Europe Financing

Corridor (Region)	Countries	Project Example (segment)	Team Europe Financing Example
Praia–Dakar–Abidjan (West Africa)	Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone	Praia–Dakar Road (Cabo Verde) – new highway segment ; Dakar–Abidjan	Blended finance: e.g. Cabo Verde €38.1 m (incl. €17 m EU)

Corridor (Region)	Countries	Project Example (segment)	Team Europe Financing Example
	Leone, Côte d'Ivoire, Cabo Verde	Liberia, Corridor (Liberia) – road rehabilitation	grant) ; Liberia segment €53.8 m (incl. €20.2 m EU grant) with EIB & AfDB
Libreville–Douala–N'Djamena (Central Africa)	Gabon, Equatorial Guinea, Cameroon, Chad, São Tomé & Príncipe	Douala–N'djamena Road upgrades (Cameroon/Chad); port and rail improvements at Kribi	Blended finance: e.g. Cameroon railway €243 m (incl. €23.6 m EU grant) co-financed by EIB & AFD ; Road scheme €275 m (incl. €35 m EU grant) with EIB & World Bank
Dar es Salaam–Nairobi–Addis (East Africa)	Tanzania, Kenya, Ethiopia, Somalia, Djibouti	Kenya Northern Corridor (Mombasa–Kampala) – highway and rail upgrades; Addis–Djibouti rail improvements	Team Europe Initiative: France & Germany with EIB on Mombasa–Kisangani corridor; in Uganda, a €229.5 m project involves AFD, AfDB and €91 m EU contribution. EFSD+ guarantees likely to de-risk private investment in rail.

Sources: European Commission (2023) *Global Gateway Africa-EU Investment Package* ; *Team Europe Corridor factsheets*.

Beyond physical corridors, the EU also funds **urban mobility** through thematic programs. For example, the **Global Challenges** thematic envelope of NDICI (€6.36 billion) covers Climate Change and Urban Development, under which initiatives like MobiliseYourCity are funded (this partnership receives €12 million from the EU to help cities develop Sustainable Urban Mobility Plans). **Horizon Europe** supports global research cooperation on clean transport – a notable project is **SOLUTIONSplus** (2020–2024), a €19 million EU-funded effort in which cities in Africa, Asia, and Latin America pilot electric buses, e-scooters, and charging solutions in “living labs”. Knowledge-sharing programs like **Erasmus+** and the **Covenant of Mayors** also contribute by training transport professionals and city leaders in sustainable mobility best practices.

In summary, at the EU level, a **comprehensive toolbox** exists: large grants for infrastructure (NDICI geographic), strategic blending of loans and guarantees (EFSD+), high-level connectivity strategy (Global Gateway), research and innovation funding (Horizon Europe), and capacity-building platforms (Erasmus+, Covenant, etc.). The challenge is to ensure these tools are used in concert rather than isolation – which is where the Team Europe approach comes in, linking EU and Member State efforts.

5.2.2 Bilateral Development Agencies and Banks

European national development agencies have long supported transport in developing countries, often focusing on sub-sectors aligned with their expertise or foreign policy priorities. Table 3 profiles several major bilateral actors and their known programs in sustainable road/rail transport:

Table 4: Selected European Bilateral Agencies and their Transport Initiatives

Agency (Country)	Modality & Scale	Transport Focus Areas	Example Programs / Projects
BMZ / GIZ / KfW (Germany)	BMZ sets strategy; GIZ technical assistance; KfW development bank loans. Germany commits ~€200–300m/yr for urban mobility via KfW.	Urban transit (BRT, metro) , e-mobility, rural roads, regional connectivity. Strong climate emphasis.	Transformative Urban Mobility Initiative (TUMI) : BMZ-funded, mobilizing €1 billion/yr via KfW for sustainable transport (metro lines in Latin America, cycleways in Africa, BRTs in Asia). Green Transport Africa : GIZ programs supporting e-bus pilots (e.g. in Accra, Kampala). Rural Roads : KfW co-financing feeder roads in Ethiopia and Rwanda.
AFD / Pro-parco (France)	AFD public-sector loans & grants; Pro-parco for private. Transport ~15% of AFD portfolio.	Mass transit (metros, trams, BRT) , railways, climate mobility policy, para-transit reform.	AFD Urban Transport Projects : e.g. Dakar Regional Express Train (co-financed with Senegal gov't), Abidjan BRT (planned, with EU grant), Addis Ababa BRT (AFD €85 m loan for first corridor), MobiliseYourCity (co-initiator, €20.5 m support). Rail : financing rolling stock for Pretoria–Maputo rail, rehabilitation of Trans-Gabon railway.
FCDO / UK Partner orgs (UK)*	(UK no longer EU, but historically a major transport donor via DFID, now FCDO and British Investment International)	<i>Focus on urban mobility, road safety, policy reform (pre-2020). Post-2020 increased dev finance via BII.</i>	<i>e.g. DFID co-funded Lagos BRT operations plan, Nairobi transit-oriented development studies. BII exploring green bonds for electric buses. (UK included for context, though no longer in EU Team Europe.)</i>
Sida (Sweden)	Grants, soft loans, guarantees. Uses MDB trust funds often.	Road safety, rural access , sustainability integration. Supports gender and accessibility in transport.	Sida & World Bank Global Road Safety Facility : funding safety improvements on high-risk roads in Africa. Urban Transport Integration : modest grants to policy studies (e.g. support to Vietnam for integrating metro with bus networks). Guarantees : e.g. backing local banks in Kenya to lease electric minibuses (via IFU).
Danida (Denmark)	Grants, mixed credit, twinning programs.	Non-motorized transport (NMT) , urban planning, climate adaptation for roads.	Bicycle City Initiatives : Danida funded cycling infrastructure and training in cities like Dhaka and Kampala, leveraging Danish cycling expertise. Feeder Roads in West Africa : improving farm-to-market roads in Ghana with climate-resilient designs.
Netherlands (FMO, RVO)	FMO: development finance for private sector; RVO: grant programs.	Logistics and ports, bicycling , public transport operations.	Transit-Oriented Development : Dutch expertise shared with Bandung (Indonesia) and Medan under RVO programs. Green Shipping and Ports : FMO loans for electric ferries

			in Vietnam (complementing land transport decarbonization). Dutch Cycling Embassy city partnerships promoting bike lanes in Bogotá and Nairobi.
Enabel (Belgium)	Belgian development agency (grants and TA).	Urban planning, traffic management, training.	Urban Mobility in Francophone Africa: Enabel projects in Burkina Faso and Senegal on traffic management systems, driver training and inclusion of informal transport in city plans. Collaborates with local city governments on pilot bus lines.
Others (Austria, Spain, EU12)	Smaller volumes, often via multilateral channels. Spain's AECID and SECI focus on Ibero-America; Austria on rail/logistics.	Various niche areas. Often tied to national industries (e.g. Spanish support for metro systems where Spanish firms involved).	Metro de Quito support: Spanish cooperation provided technical advisors during Quito Metro construction (tied to Spanish contractor). Austrian envirotech grants: financing electric trolleys and cable cars in mountainous regions (e.g. Nepal) with Austrian tech.

Sources: Agency strategy documents, press releases, project databases. e.g. TUMI report (2022) notes €2+ billion mobilized for 100+ urban projects ; AFD transport sector brief ; Sida urban transport study (1998) noted 54 projects, SEK 700 m over 18 years ; Danida NMT case studies.

European bilaterals often bring **specialist expertise**. Germany, for instance, has emerged as a leader in urban mobility capacity-building through **TUMI** – which in five years leveraged over €2 billion for projects and empowered dozens of cities to implement innovations. KfW's financing under TUMI has supported projects like the **Kochi Metro** in India (a €85 million loan for Phase I) and the new **Water Metro** (electric ferries) in the same city, as well as mass transit in Colombia and China. Meanwhile, GIZ under TUMI runs knowledge programs on e-buses (the **TUMI E-Bus Mission** with C40 Cities) and on women's mobility. A senior KfW manager explained that through such initiatives "KfW is more than a financier; it is also monitoring projects' impact... [while] partners' lack of capacity poses a big problem" – hence the focus on project prep and training.

France's AFD has carved out a strong role in francophone Africa and beyond, financing flagship systems (it helped finance **Dar es Salaam's BRT Phase 5** with a €178 million concessional loan, and is supporting **Nairobi's BRT** design alongside the World Bank). AFD's new strategy emphasizes broadening beyond just big infrastructure to also "support public policies, optimize traffic flows, improve conditions for pedestrians and cyclists, and modernize informal transport". For example, AFD is funding data-driven approaches to integrating minibus taxis in Lomé and Lagos. In Latin America, AFD co-financed **Bogotá's metro** and **Medellín's tram line**, showing a South-South cooperation aspect as well.

Other bilaterals, though smaller, fill important niches. Sweden's Sida often supports **sustainability mainstreaming** – an internal study candidly noted that historically, Sida's large

transport aid focused on roads and admin reform, with “very few examples” of sustainable urban systems, leading to a push in the 2000s to integrate environment and poverty in urban transport. Today Sida provides green guarantees and funds studies (often via multilateral facilities). Denmark has used its cycling culture as soft power: Danida helped develop **cycle masterplans** in cities like Dhaka, launching cycle highways and safety campaigns. The Netherlands channels expertise through public-private platforms (e.g. **Dutch Cycling Embassy**, **Bike Anjo** exchanges in Brazil).

A critical trend is **bilateral alignment with EU initiatives**. Many Member States now co-finance Team Europe projects (discussed in the next section), effectively merging bilateral funds into larger European packages. For instance, **AFD and KfW are co-implementers of EU-blended projects** like Dakar’s bus network renewal, where French and German loans combined with an EU guarantee. Similarly, GIZ often implements EU grants on the ground via delegated cooperation agreements (the EU trusts GIZ to execute technical assistance in e.g. Morocco or China e-mobility projects).

5.2.3 Sub-National Actors and Decentralized Cooperation

An often under-appreciated layer of support comes from Europe’s **regional and local governments**. Regions (such as France’s Île-de-France or Germany’s North Rhine-Westphalia) and cities (like Paris, Barcelona, Hamburg) engage in direct partnerships abroad, leveraging their own expertise in transport planning and operations. This form of *decentralized cooperation* tends to be small-scale but high-impact in capacity-building.

For example, the **Île-de-France Region** (which manages Paris’s transport authority) has co-operated with **Abidjan, Côte d’Ivoire** on improving bus services – providing technical advice on bus route design and fare systems through a twinning arrangement (with support from EU’s **Platforma** network). Many German *Länder* have partnerships in Africa: **Baden-Württemberg** supports sustainable mobility planning in Kigali as part of a climate cities initiative, and **Bavaria** has provided buses and training to Cape Town’s MyCiTi BRT. **Spanish Comunidades Autónomas** (regions) and cities are active in Latin America via the **UE-CELAC city partnerships** – for instance, **Barcelona** worked with **Montevideo** on a bike-share system design, sharing lessons from Barcelona’s Bicing program, while **Madrid** has hosted training for metro officials from Quito prior to the latter’s metro opening.

These decentralized efforts are often coordinated through EU frameworks. The **International Urban Cooperation (IUC)** program (2016–2020) and its successor the **Global Covenant of Mayors** city-pairing have matched European and Asian/LATAM cities to develop Sustainable Urban Mobility Plans (SUMPs). Under IUC, **Hamburg (Germany)** was paired with **Dar es Salaam (Tanzania)** – Hamburg experts advised Dar city officials on integrating feeder minibuses with the new BRT system, contributing to a pilot scheme for formal feeder routes. Similarly, **Turin (Italy)** partnered with **Hanoi (Vietnam)** on public transport accessibility improvements via an EU city pairing scheme in 2019, complementing larger national projects.

Regional development banks and associations also come into play. The **Association of Dutch Provinces (IPO)**, for example, has facilitated an exchange where Dutch provincial transport planners assist counterparts in Indonesia on regional bus services. **Flanders (Belgium)** has

funded a project in Durban (South Africa) to develop cycle lanes, tying in with Durban's climate action plan. Many of these efforts are modest (<€1 million budgets) but they lay groundwork for acceptance of larger investments by building local technical capacity and demonstrating solutions on a pilot basis.

European city networks like **POLIS**, **EUROCITIES**, and **ICLEI** extend their outreach globally. Through the EU-supported **SOLUTIONS/SOLUTIONSplus** projects, European cities and companies teamed up with global cities: e.g. Madrid and Hamburg served as mentor cities for **Hanoi** and **Pasig**, hosting peer exchanges on e-buses and smart mobility. This horizontal co-operation is an important complement to vertical donor aid – it often addresses the “**soft**” **aspects of transport transitions** (planning processes, stakeholder engagement, operational know-how) which are critical for success but cannot simply be bought with infrastructure money.

In summary, the landscape features a **rich diversity** of actors:

- At **EU level**: a large common budget and strategy (NDICI, Global Gateway) with powerful financing tools (grants, guarantees, EIB loans).
- At **Member State level**: specialized agencies and banks contributing finance and expertise, increasingly aligning under Team Europe.
- At **sub-national level**: knowledge-driven partnerships transferring the tacit experience of European cities to their peers in the Global South.

The next section explores how these actors are (and are not yet) working together – following the money flows, collaborations, overlaps, and identifying where coordination is delivering impact or falling short.

5.3 Flows and Intersections: Financing Synergies, Shared Platforms, and Gaps

Europe's multi-layered engagement in transport can be visualized as a network of **financial flows** and **collaborative platforms**. In an ideal “one system” approach, these flows reinforce each other: EU grants might de-risk a project that bilateral banks then co-finance, while a city partnership ensures the project's design reflects best practices. This section analyzes the current state of such intersections. We first track joint financing arrangements – highlighting instances of **blended finance** and Team Europe collaborations. We then examine shared technical and policy platforms (like partnerships and networks). Next, we assess regional distribution and overlaps of efforts on the ground. Finally, we identify thematic areas that may be under-supported (gaps) relative to needs.

5.3.1 Joint Financing and Blending: The Rise of Team Europe Initiatives

Perhaps the most significant development in recent years is the emergence of **Team Europe Initiatives (TEIs)** – coordinated packages where the European Commission, Member States,

and European development banks join forces around a common objective. In the transport sector, TEIs have been launched for specific regions and themes:

- **Team Europe “Green Mobility” Initiatives:** For example, in Asia, the EU and France/Germany announced a Team Europe Initiative on sustainable connectivity which includes support for metro and BRT developments in partner cities (notably in India and Vietnam). In Africa, the **Mombasa–Kampala Corridor TEI** mentioned earlier pools EU, EIB, AFD, and KfW resources for upgrading that trade route.
- **Global Gateway Flagship Projects:** Many Global Gateway investments are implemented as TEIs. A case in point is the **Dakar Sustainable Urban Transport Project** – framed under Global Gateway, it brought together an **EU grant (€20 million)**, a **KfW grant (€30 million on behalf of BMZ)**, an **AFD loan (€103.5 million)**, and an **EIB loan (€166.9 million)**, totaling €320 million to overhaul Dakar’s bus network. The EU Ambassador and finance institution heads signed a joint agreement with Senegal’s minister, symbolizing the new “Team Europe” way.

The Dakar case is emblematic. As Senegal’s minister Oulimata Sarr remarked, it’s a *“joint effort from the Government of Senegal and Team Europe”* that aligns with national plans. From the European side, Commissioner Urpilainen hailed it as *“a tangible demonstration of Global Gateway...a prime example of what we can achieve by mobilising the EFSD+ guarantee for EIB lending”*. In effect, the EU guarantee enabled the EIB to lend more favorably, which – combined with AFD and KfW contributions – delivered a financing volume Senegal likely couldn’t have obtained from each actor separately.

Another joint financing success is the **Quito Metro Line 1**. This \$2 billion project was jointly financed by **four** MDBs: the World Bank (US\$205 m), Inter-American Development Bank (US\$200 m), **European Investment Bank (US\$250 m)**, and **CAF-Development Bank of Latin America (US\$250 m)**, along with local funds. While not branded “Team Europe” at inception (it began in 2013), it illustrates European coordination – the EIB stepped in as the largest lender from Europe, and Spain provided technical assistance. All four banks pooled their loans to finance a single component (23-km tunnel and stations) under unified procurement. The result: Quito now has a metro moving 369,000 passengers per day with dramatically reduced travel times and emissions, in operation since 2023. A local official noted that without this blended financing, the metro “would have remained on paper” – the partnership gave confidence to proceed. The Quito Metro is now cited as a model for blending public loans for urban rail, and its success led the EU to include Quito in a new **“eBRT2030”** project to continue integrating e-mobility and public transport.

Joint financing is also enabling **BRT systems** across Africa. In Dar es Salaam, after the World Bank funded Phase 1, the African Development Bank financed Phase 2, and AFD stepped in to finance Phase 5 with EU climate funds support. In Lagos, Nigeria, **AFD and the EU** co-financed rolling stock for BRT expansion in 2018 (with an EU grant reducing the cost of AFD’s loan). In **Nairobi**, the UN Environment Programme mobilized a consortium including the EU, France, and Japan to support an electric BRT pilot fleet – each bringing complementary resources (the EU funded charging infrastructure, AFD provided concessional loans for buses, JICA assisted with traffic management systems).

These examples show the **power of blending grants, loans, and guarantees**. They also highlight how **burden-sharing** can make large projects feasible. However, achieving such synergy requires overcoming institutional hurdles. It entails aligning project cycles, agreeing on common standards, and sometimes subordinating individual visibility to joint branding. In Dakar's case, the agencies agreed to use Senegal's newly created Dakar Mobilité company as the single counterpart. In Quito's case, the four banks harmonized procurement rules via special arrangements. These represent best practices for integration.

On the European side, mechanisms like the **EFSD+ Guarantee Platform** and regional blending facilities (e.g. EU's Africa Investment Platform) provide structured ways for multiple donors to contribute to one investment package. Still, not all joint efforts are smooth. **Differing safeguards or procurement rules** can slow disbursements when institutions co-finance (bottlenecks discussed later). Yet the direction is clear: **Team Europe co-financing is becoming the norm for big-ticket transport projects**. The European Union has identified transport as one area where speaking with one voice abroad amplifies impact – indeed, EU ambassadors in Africa “greenlighted” the strategic corridors plan precisely to avoid duplication and maximize collective leverage.

Beyond big infrastructure, joint financing is enabling innovation pilots. **SOLUTIONSplus Living Labs**: initially funded by Horizon Europe, triggered a number of co-funding for the pilot projects and in particular for the scale-up and replication. In Kigali's e-mobility pilot, the EU provided e-motobikes and technical expertise, and the German government (through GIZ) provided a grant to integrate women drivers and scale-up is rolled out through a Mitigation Action Facility project. In Montevideo's logistics pilot, the European Commission funded vehicles and studies, while France (through ADEME) gave a grant for the charging hub. These small coordinated inputs produced outsized results – e.g. Montevideo tested e-cargo bikes and saw 23% gains in delivery efficiency, informing the city's scale-up plans.

5.3.2 Shared Technical Platforms and Policy Collaboration

Financial blending is one side of the coin; **technical cooperation platforms** form the other side, ensuring knowledge and policy alignment. Europe has been instrumental in convening or supporting several multi-partner platforms in transport:

- **MobiliseYourCity Partnership (MYC)**: Launched by the EU, France, and Germany at COP21 in 2015, MYC provides a platform for cities to develop Sustainable Urban Mobility Plans (SUMP) with expert support. By 2022 it had 100 member cities across 20 countries. It is implemented jointly by AFD, GIZ, and other partners. The EU's contribution (via DG INTPA) and the French and German funding all go into a common pot, which then deploys consultants and capacity-building to cities. This avoids duplication – instead of each donor separately offering a SUMP program, they pool resources so cities have one coordinated process. Cities like **Yaoundé and Douala** (Cameroon) have completed SUMP through MYC, and are now moving toward implementing bus priority lanes and pedestrian zones with support from this partnership. An AFD transport expert noted that *“the dynamic planning approach [of MYC] allows strategies to be regularly updated...not a rigid plan”*, emphasizing iterative learning. This kind of

shared platform fills a critical gap in planning capacity and ensures donors are singing from the same hymn sheet (e.g. using the same methodologies and data for planning).

- **Sustainable Mobility for All (SuM4All):** A global multi-donor initiative (with the World Bank, EU, Germany, etc.) that coordinates research and policy advocacy on transport decarbonization and inclusion. The EU and several Member States fund SuM4All's work on global roadmaps for electric mobility and rural access. While SuM4All is more about high-level policy, it creates a **common language and goals** (for instance, defining what “green and just transport” means) that guide individual donor investments.
- **Transport Community of Practice under the NDC Partnership:** The EU and Germany co-chair a working group helping countries translate climate commitments (NDCs) into transport strategies. They jointly deploy experts to countries requesting help (e.g. advising Morocco on how to include a high-speed rail project in its climate strategy). This coordinated advisory service means countries get a unified European support rather than parallel offers.
- **City Networks and Twinning (as mentioned):** Platforms like **EUROCLIMA+** (EU-Latin America cooperation on climate) include a mobility component where European and Latin American municipal officials jointly develop pilot projects. Under EUROCLIMA+, a **City Network on Urban Mobility** was created linking 20 Latin American cities with European mentors to work on electric bus rollout strategies. Instead of separate bilateral training by, say, GIZ and AFD, this was done collectively under EU branding, leveraging multiple experts.

These platforms often enjoy multi-donor trust funding. They facilitate **knowledge pooling**: for example, under MobiliseYourCity, a city like **Hanoi** receives consistent guidance co-developed by French and German experts, and can access peer learning events funded by the EU. One city official from Lomé described how previously “we got piecemeal advice – now via MYC it's one package; we're not repeating data collection for different donors.” This underscores efficiency gains from shared platforms.

There are also European coordination mechanisms internally: The **EU Transport Sector Coordination forums** at country level (within EU Delegations) attempt to bring all Member States and the Delegation together to coordinate positions vis-à-vis the partner government. In e.g. Kenya, the EU Delegation hosts a quarterly “Transport Donor Group” meeting including European bilaterals, where they align on messaging to the Ministry of Transport and sometimes design complementary projects (such as splitting components of support for Nairobi's BRT system among donors to avoid overlap). This echoes the broader Joint Programming approach the EU pursues in development sectors.

5.3.3 Regional Overlaps and Coordination on the Ground

Geographically, European efforts exhibit both **convergence in some regions and gaps in others**:

- **Sub-Saharan Africa:** A major focus for EU and bilaterals. Here, coordination has increased markedly. The **Africa-EU Transport Task Force** (part of the Africa-Europe Alliance) identified priority investments together. The Global Gateway's Africa Investment Package, including transport corridors, is essentially a map of where Europe will

concentrate funds to complement China's Belt & Road, etc. As a result, we see multiple European actors in East Africa's Northern Corridor (Kenya-Uganda-Rwanda): EU, EIB, AFD, KfW all engaged in segments. To prevent stepping on toes, roles have been divided: e.g. **Uganda's Kampala–Mpigi Expressway** is EU-blended with EIB lead, while **Kenya's Nairobi Bypass** got a loan from France, and **Rwanda's feeder roads** are co-financed by Germany and EU. Coordination is ensured through the corridor platform.

In contrast, some African countries had previously received scattered projects – e.g. Tanzania saw years where EU funded rural roads while Japan funded urban flyovers and Korea funded one BRT line, all without alignment. This is changing with Team Europe: now **Tanzania's BRT expansion** is planned in a coordinated way, with the World Bank and AfDB leading infrastructure for phases, and the EU providing technical assistance on electrification of the BRT fleet (via a new TEI on e-BRT) so that future phases integrate electric buses from the start.

- **Asia:** The EU's presence varies. In **South Asia**, JICA and MDBs dominate transport funding (e.g. metros in India, Pakistan, Bangladesh largely Japanese or multilaterally funded). But European actors still find niches – AFD in Bangladesh BRT, KfW in India metro lines. Coordination here is less formal compared to Africa, but happening via initiatives like the **EU-India Connectivity Partnership** and through co-financing of multilateral programs (the EU contributed to an ADB regional transport connectivity trust fund for Central Asia, for instance). One gap identified is **Central Asia and Caucasus** – EU and member states have not been very active in sustainable urban mobility there, which remains a gap region outside the Neighbourhood. The report suggests exploring Team Europe support in those regions as well.

In **Southeast Asia**, there is moderate overlap: Vietnam's urban transport has involvement from France (metro Line 3 in Hanoi, tram in Hanoi supported by AFD), Germany (integrated planning via GIZ), and EU (policy dialogue). A notable example of synergy is the **Hanoi Metro Line 5** which is being prepared with EU technical support in coordination with French financing – a lesson from earlier lines where lack of coordination led to delays. **Team Europe in ASEAN** is emerging via the ASEAN Green Transport Initiative (EU, Germany, and others supporting e-mobility policy across ASEAN).

- **Latin America:** Historically, European bilaterals had a smaller role since MDBs (IADB, World Bank) and CAF were primary financiers, and many LatAm countries are middle-income (less grant aid). However, the EU's **LAIF (Latin America Investment Facility)** blending tool has enabled some strategic co-investments – e.g. EU grants supporting the **Bogotá Metro** finance plan alongside EIB and IDB loans. Spain and Germany often participate via technical cooperation (Spain in many metros, GIZ in Colombian urban mobility policy). The **EUROCLIMA+ programme** is a coordination platform where EU and Member States combine resources on climate projects; it has funded over 20 sustainable mobility pilot projects in Latin America (e.g. electric buses in Chile, bike lanes in Ecuador) with France, Germany, and Spain all contributing to the same program. This prevents overlaps like each donor running separate climate mobility programs in the region – instead they act collectively under EUROCLIMA.

A **thematic gap** across regions has been **freight transport and logistics**. Donors historically focused on passenger mobility and roads for connectivity. Decarbonizing freight (trucks, logistics chains, rail freight) received less attention. This is changing post-2020 as emissions data show freight's large and growing share. For example, the EU is now considering a **Green Freight Team Europe Initiative** for Asia, possibly leveraging EFSD+ guarantees to finance electric truck fleets or green logistics zones. Currently, much of the work on freight comes from multilateral climate funds (e.g. GEF) and the private sector – a gap for coordinated donor action.

Another overlapping area is **policy reform** – often, multiple donors engage in advising on transport policy (one on traffic law, one on subsidy reform, etc.). Coordination forums like the **SSATP (Africa Transport Policy Program)** – which the EU and France co-fund – help unify policy advice to African governments. For instance, SSATP has a urban mobility program that consolidates guidance on regulatory reform for cities like Lagos and Addis, ensuring JICA's advice and GIZ's advice and EU's advice aren't contradictory but harmonized.

Despite improvements, **gaps remain**:

- **Rural Mobility:** While EU and some bilaterals fund rural roads, the coordination here is weaker. Many rural road programs are national or single-donor. A *“Rural Access Team Europe”* approach could share best practices (e.g. community-based maintenance models in Ethiopia financed by KfW could be replicated by EU in Burkina).
- **Rail revival:** Investment in rail (esp. intercity passenger and freight rail) in Africa and parts of Asia is minimal from Team Europe. China's Belt & Road built some rail, but EU so far focuses on urban rail. As climate goals push rail, there is an opportunity for European coordination in supporting rail corridors (beyond just studies). The North Africa region's rail connectivity (e.g. Maghreb high-speed rail linking Morocco-Algeria-Tunisia eventually) could be a Team Europe focus, but currently it's piecemeal (France did Morocco HSR, others not involved due to politics).
- **Innovative financing:** Use of tools like green bonds for transport is an area where EU could assist countries, but currently only individual initiatives (e.g. Luxembourg is advising Cape Town on a green bond for rail rolling stock). A coordinated European effort to develop domestic transport financing markets in partner countries is lacking.

In financial terms, **European development finance flows into transport are now significant and growing** – EIB's extra-EU transport portfolio was ~€2.5 billion from 2016–2020, AFD committed €1.8 billion to transport in 2019–2021, KfW around €1 billion in 2020 alone via TUMI. With Global Gateway, more EU grants will augment these flows. The **key is alignment**: ensuring money addresses the most strategic projects and not scattered on low-impact ones.

The mapping and flows analysis shows promising alignment in flagships (metros, BRT, corridors) and through platforms (MYC, SUM4All). However, it also reveals **bottlenecks** and **inefficiencies** that persist. The next section examines these bottlenecks along the impact pathways: from idea to pilot to scale – where do things get stuck and why? And conversely, what enabling factors in these coordinated efforts lead to real impact on the ground?

5.4 Impact Pathways and Bottlenecks: What Works and What Hinders Alignment

Having mapped who does what and how money flows, we now turn to **effectiveness** – are these coordinated efforts delivering tangible improvements in transport systems? We analyze successful impact pathways where EU, national, and local actions complemented each other to produce results (e.g. reduced emissions, improved access, gender inclusion). Alongside, we identify bottlenecks and inhibiting factors that still prevent full alignment or reduce impact, based on case evidence and expert insights. These insights are also reflected in deliverable D4.3.

5.4.1 Impact Pathways: From Pilots to Policy Change to Scaled Investment

Several **illustrative pathways** show how coordination among European actors can create virtuous cycles of innovation, policy reform, and scaling up:

- Innovation to Investment (SOLUTIONSplus Pathway):** In the city case studies, we see a sequence where a *European-funded pilot* demonstrates a new solution, which then unlocks larger funding to scale it. For example, in **Kigali, Rwanda**, the SOLUTIONSplus project (EU-funded, with German technical support) piloted **24 electric motorcycle taxis driven by women** – a first in the city. The project provided technical and financial support to a local startup (Ampersand) for battery swapping and trained 24 women, breaking gender barriers in a sector where <1% of drivers were women. The result after six months: women achieved a 69% driving test success rate (far above previous attempts) by addressing their specific needs (training, financing). This pilot not only reduced emissions (each e-moto saves ~1 ton CO₂/year) but also proved women can thrive as drivers given support. **Outcome:** Kigali's city authorities, convinced by the pilot, worked with ITDP and the EU to develop a citywide **E-Bus and E-Moto Strategy**, and by late 2023 had initiated an **E-Bus Master Plan** for the city. This paved the way for larger investment: in 2024, the World Bank and AfDB are considering financing a fleet of 200 e-buses for Kigali, and Ampersand has attracted private investment to expand to 3,000 e-motos. A Rwandan transport official noted, *"The EU pilot gave us evidence and confidence; now bigger players are coming in to scale it"*. Thus, a small coordinated European intervention triggered policy change (city adopting e-mobility in plans) and leveraged much larger follow-on funding.
- Policy to Infrastructure (MobiliseYourCity Pathway):** In Douala, Cameroon, the MobiliseYourCity partnership helped the city formulate its first Sustainable Urban Mobility Plan by 2019. European experts guided local officials to plan an integrated public transport network, including BRT corridors and river ferries, and to set policy measures (like car-free days) to shift behavior. Crucially, this SUMP created a pipeline of bankable projects with broad stakeholder buy-in. Subsequently, in 2021–2022, the **World Bank and AFD approved \$320 million** in loans and grants to implement Douala's priority projects – starting with two BRT lines and junction improvements, explicitly

referencing the SUMP analysis to justify the investments. AFD's project officer said without the "coherent city plan" developed via MYC, it would have been hard to finance the BRT: *"Now the city has a vision, we can support pieces of it knowing they will form a network"*. The impact pathway: **joint technical assistance** (EU, France, Germany through MYC) led to **policy/planning outputs** (SUMP) which unlocked **capital investment** (by MDBs/bilaterals). The expected outcome is a 25% increase in public transport mode share and 15% reduction in CO2 by 2030 in Douala. Importantly, the coordination meant that the World Bank and AFD trusted the plan and each other to co-finance different components rather than working at cross purposes.

- **Research to Policy (EU Horizon to National Policy):** The EU's Horizon research has helped create policy pathways. For example, the **DeCARB LAC** project (Horizon 2020) developed a tool for Latin American cities to quantify GHG impacts of transport policies. Chilean researchers and European experts collaborated, producing a toolkit adopted by Chile's Ministry of Transport. This fed into Chile's national e-mobility strategy, which the EU and Germany then funded through implementation support. Now Chile has one of the largest electric bus fleets (800+ e-buses in Santiago) largely financed by private and national funds, but the impetus and planning capacity came from that initial EU research collaboration. An official in Chile's transport ministry noted that EU grants can influence policy "by funding the analytical work our budget doesn't cover," leading to evidence-based policies that later attract big investment (in Santiago's case, a local private consortium financed e-buses with technical confidence coming from the analysis).
- **City-to-City to Project (Twinning Pathway):** City partnerships can turn into concrete investments. **Pasig, Philippines** (case study) received mentorship from Murcia, Spain on designing an electric tricycle sharing system for local government use. Through the SOLUTIONSplus project, Pasig developed and deployed **e-quadracycles** for city health services and built a reservation app with support from a Laos tech startup. The positive results (improved service delivery to health centers, and city officials demonstrating viability of EVs) influenced the national government's policy – Pasig's experience was highlighted in the **Philippine Urban Mobility Program (PUMP)** concept developed with EU assistance. Now, the Department of Energy is considering incentives for e-quads and e-trikes nationwide. Moreover, Pasig itself decided to allocate city budget to expand the fleet. Thus, a city-level twinning and pilot, supported by European actors, led to replication and policy uptake at national scale. The *impact*: lower operating costs for city transport (Pasig found the e-quads have lower total cost of ownership than conventional vehicles), reduced local pollution, and a model that other Philippine cities can copy under the national PUMP framework.

The above pathways show certain **success factors** recurring:

- *Early coordination on planning and pilots* – which de-risks later infrastructure finance.
- *Inclusivity and stakeholder engagement* – European projects often emphasize participation (e.g. consulting informal transport operators in Douala's plan, or training women drivers in Kigali), which builds social license for changes.
- *Use of data and evidence* – aligning on metrics (like in Quito measuring 6.5 tCO2 avoided in the pilot) helps convince finance ministries and banks to fund scale-up.

5.4.2 Bottlenecks: What Inhibits Alignment and Impact

Despite progress, several **recurring challenges** impede the seamless cooperation of “one system, many actors”. The most commonly cited bottlenecks include:

- **Fragmented Procedures and Slow Coordination:** Each donor has its own project cycle, procurement rules, and safeguard standards. In joint efforts, reconciling these can be slow. For example, in the Dakar bus project, aligning EIB’s and AFD’s procurement processes with Senegal’s preferences took extra time – a delay occurred in procuring the 380 buses because of differing technical specs requirements. An insider noted that the coordination meetings sometimes became bureaucratic, *“with four institutions debating whose rule prevails”*. While eventually resolved (by adopting the stricter standard as common), such wrangling can slow implementation. A related issue is the **speed of EU grant disbursement** – some partner governments perceive EU procedures as lengthy compared to say China’s quick action. Team Europe projects must balance thoroughness with timeliness to maintain credibility that this coordination is efficient.
- **Visibility and Credit-Sharing Issues:** Donor agencies naturally want to showcase their contribution. In some cases, rivalry can creep in, undermining alignment. An anonymous expert from a bilateral agency admitted that *“there’s often competition for the ‘flag’ on a project”*. For instance, when Abidjan’s urban transport improvements were up for funding, multiple donors jostled to lead. The solution has been co-branding (e.g. calling it a “Team Europe” project and listing all logos), but ego issues can still create friction. At times, smaller EU Member States feel their role in Team Europe is overlooked in favor of larger players. Transparent communication and joint PR are needed to ensure all actors feel recognized, or better yet, adopt a **“collective impact” mindset** where results matter more than individual branding.
- **Local Absorptive Capacity:** One of the largest bottlenecks lies on the recipient side: limited institutional capacity to handle complex projects, especially if multiple funders are involved. A city may struggle with the reporting requirements of several donors at once. In Dar es Salaam’s BRT expansion, the city authority DART had capacity issues and coordination between the World Bank and AfDB projects was weak at first. The remedy was a joint capacity building program (World Bank financed a Project Management Consultant to help DART manage multiple donor contracts). This indicates the need for *dedicated support units* for multi-donor projects. Without it, even well-funded plans can flounder – e.g. the Addis Ababa BRT was delayed for years partly because the city could not manage the French-funded and Korean-funded components concurrently and had to sequence them.
- **Misaligned Incentives or Priorities:** Sometimes donors and governments diverge on priorities, causing disjointed efforts. For instance, a government might prioritize a prestige highway while EU donors prioritize urban transit. If not reconciled, this can lead to parallel investments rather than joint. A case was in Kenya around 2015: the government focused on big roads; the EU wanted bus systems. Initially there was little synergy. In recent years, Kenya’s stance shifted to include BRT (Nairobi BRT is now a shared priority), enabling alignment. Continuous policy dialogue is needed to align priorities – Team Europe can actually help by speaking with one voice to encourage governments to adopt sustainable transport priorities, thus reducing this bottleneck.

- **Funding Gaps and Continuity:** A coordinated architecture only works if each part is financed in sync. There have been instances where a pilot happened (EU financed) but the scale-up funding didn't materialize as hoped, leaving a gap. E.g. an e-mobility pilot in Uganda (with some Swedish funding) showed success, but follow-on investment was slow as private sector was wary and public funds were not ready – leaving the project in limbo and momentum lost. This highlights a need for *better sequencing*: ensuring that when EU funds a demonstration, parallel efforts are made with MDBs or others to secure scale-up finance (possibly through guarantee or blending while the pilot is running). Without that, pilots risk becoming orphaned “nice experiments”. One expert quipped: “*We have no shortage of pilots, but a shortage of pilots graduating to full systems.*” The solution is embedding scale-up planning (business models, financing strategy) into pilot projects – something SOLUTIONSplus did well by preparing scale-up concept notes for each city.
- **Coordination Fatigue and Transaction Costs:** Aligning many actors requires meetings, coordination units, joint monitoring, etc. There is a real risk of **coordination fatigue** where time spent coordinating eats into time for implementation. A city official in an East African capital observed that while donor coordination is beneficial, “*we spend so much time in workshops and writing joint reports that actual work on the ground slows.*” Streamlining reporting (e.g. a single joint progress report for all funders) can mitigate this. The Team Europe approach is still new, and all parties are learning how to keep transaction costs reasonable. The EFSD+ joint guarantee platform helps reduce burden by having one mechanism cover many financiers, but at project level, more simplification is needed. Delegated cooperation (one lead executes on behalf of all) is one answer, though it means others cede control.
- **Political and Economic Risks:** External factors can derail aligned efforts. For example, if a partner country undergoes a political change, priorities can shift, leaving a coordinated program stranded. In Latin America, some Team Europe plans for BRTs got shelved after city elections brought car-centric mayors. Economic crises (like debt distress) can also cause governments to backtrack on borrowing plans – a risk now in some low-income countries as global interest rates rise. This underscores that flexibility is needed; Team Europe must be able to adapt and perhaps provide more grant or guarantee support when economic conditions worsen to keep projects viable.

In the discussions among the STRENGTH_M Task Force, experts highlighted one meta-bottleneck: **lack of a unified monitoring and evaluation framework** to measure collective impact. Each donor still has its own M&E. So, while we can cite individual results (like CO₂ saved in a pilot, or ridership on a new metro), it is hard to aggregate what Team Europe's overall transport efforts achieve. Without a clear shared results framework, it may be challenging to keep alignment politically attractive (since successes might not be captured comprehensively). There is movement on this – the EU's Global Gateway scoreboard will attempt to track outputs of combined investments. Developing common indicators (e.g. number of people with improved access to transport through Team Europe projects, tons of CO₂ avoided, etc.) would allow demonstration of collective impact, reinforcing the rationale for coordination.

5.4.3 Perspectives from Practitioners

Discussions with practitioners underline the importance of timing and administrative simplicity, the added leverage that a coordinated donor front can bring to cross-cutting agendas such as gender equity and climate finance, and the value of sustained trust-building among partners. Below are a few illustrative examples from practitioners, which have been generalized to allow for a candid perspective on the main points:

A city planner remarked that, in the past, each donor financed isolated pieces of infrastructure—an intersection here, a depot there—without linking them. A new multi-donor partnership now brings everyone to the same table, allowing work toward one integrated transport system. The arrangement still strains local capacity: several different reporting templates had to be merged after complaints. The planner is confident the effort will pay off once the planned bus-rapid-transit line becomes operational.

A senior official from a development-finance institution noted that, although donors still care about visibility, the urgency of climate action has pushed them to pool resources. Years of quiet coordination around a large urban project demonstrated that multiple agencies can act as a single team when necessary, with a blended-finance guarantee proving decisive. In this view, joint programming should become a normal way of working rather than an exceptional success story.

A metropolitan transport officer highlighted slow procurement and disbursement as major obstacles. One donor-funded study took two years just to hire a consultant; by the time results arrived, a change of local leadership had made parts of the study obsolete, while another donor had already built flyovers. Donor procedures, the officer argued, must align with political cycles. Conversely, a rapidly delivered electric-bus pilot generated real momentum.

A project manager at an implementing agency explained that delegated cooperation lets external funds merge seamlessly with the agency's own bilateral activities, turning a small pilot into a nationwide programme. The trade-off is heavy dual reporting—to both the external funder and the agency's headquarters. Greater trust in existing systems, the manager suggested, could cut redundancy while preserving the “one-team” spirit.

A gender-and-mobility advocate emphasised that coordinated donor action makes it easier to embed inclusion. An e-mobility pilot deliberately trained women as commercial riders, a move now being replicated elsewhere under a global programme. Such human-scale outcomes, the advocate argued, are every bit as important as quantitative indicators.

A climate-finance specialist observed that transport is shedding its reputation as a marginal climate sector. By bundling a major bus-transit scheme into a climate-mitigation proposal, partners were able to secure co-financing from multilateral climate funds—an outcome unlikely under a fragmented approach. Alignment therefore unlocks both additional donor capital and access to larger global funding windows.

This shows real gains from coordination – projects implemented, policies adopted, new funding unlocked – alongside real challenges that need addressing to fully realize the potential of the

“one system” approach. The next section looks ahead to opportunities in the remaining half of this decade (2025–2030) to build on these successes and fix the shortcomings. It identifies concrete upcoming initiatives and entry points for Europe to double down on sustainable transport transitions, as well as scenario-based projections of where we might end up by 2030 under different levels of coordination and ambition.

5.5 Opportunities 2025–2030: Emerging Funding Windows, Priority Regions, and High-Impact Sectors

The period from 2025 to 2030 will be decisive for putting transport on a sustainable trajectory to meet the 2030 climate and development goals. For Europe and partner countries, several opportunities are on the horizon to accelerate action: major funding cycles (both European and multilateral), political milestones, and technological advances. By anticipating these, Team Europe can strategically channel support to where it will be most catalytic. This section highlights key opportunities in terms of funding windows, regions, and sub-sectors, and suggests how European actors can leverage them in a coordinated fashion.

5.5.1 Upcoming Funding and Programming Windows

- **Mid-Term Review of NDICI (2024/25):** The EU will review NDICI–Global Europe allocations by 2024–2025. This is a chance to adjust funding toward underfunded priorities. Climate-related spending is mandated at 30% of NDICI; transport (as a major climate factor) could see increased earmarks. For instance, calls for proposals in 2025–27 could prioritize sustainable urban mobility in Africa or rail connectivity in Neighborhood countries. **Action Opportunity:** European stakeholders (Commission, Member States) can advocate in the mid-term review to explicitly allocate more grant funding to sustainable transport – e.g. top up the EFSD+ guarantee specifically for green mobility investments, and increase budget for urban transport programs under the Global Challenges thematic envelope. This could create dedicated envelopes for things like *Electric Mobility Acceleration* in Africa or *Public Transport for All* in Asia within NDICI.
- **Global Gateway Investment Packages (2025):** By 2025, the EU aims to have a pipeline of Global Gateway projects well underway. The **Global Gateway Forum** in late 2023 highlighted 87 “lighthouse” projects across digital, climate, transport, etc.. Many transport corridor projects are entering feasibility or design now (2023–24) with EU support. By 2025–26, these will be moving to construction and require major financing tranches. **Opportunity:** Scale up blended finance for these corridors via **EFSD+ regional platforms**. The AfDB–EU **Transport Anchor** partnership (agreed in 2022) will materialize a series of investments; Europe can ensure co-financing is in place. For example, as **Nigeria–Benin–Togo** upgrades the Abidjan–Lagos corridor, Team Europe can frontload grant support for safety, climate adaptation measures (like raised roadbeds, tree planting) to make the corridor truly sustainable. Also, linking corridors

to urban nodes provides synergy – e.g. ensuring that when a corridor reaches a city, that city has EU-supported logistics hubs and transit connections to maximize impact.

- Horizon Europe (2025–2027 Work Programme):** The final work programme of Horizon Europe will cover 2025–27, and is currently being drafted. This presents an opportunity to fund R&I that supports developing country needs and can be scaled by development finance. For example, calls could focus on **low-cost electric bus technologies for tropical climates**, or **data systems for transport emissions monitoring** that help cities meet climate goals. If Horizon projects in 2025–27 align with Global Gateway priorities, by 2030 their innovations can be market-ready for mass deployment. **Opportunity:** Align Horizon calls with Team Europe Initiatives – possibly even require Horizon consortia to include pilot implementations in partner cities (as SOLUTIONSplus did). Also, Horizon Europe could directly involve more partner country institutions (through its international cooperation mechanism) to build local innovation capacity. This will ensure Europe-backed innovation is globally relevant and readily transferable.
- Climate Finance Scaling (2025 onwards):** At COP28 (2023) and beyond, there is momentum to massively scale climate finance, including for transport (often a neglected sector in climate finance historically). The **Green Climate Fund (GCF)** is replenishing in 2024; it has signaled interest in more transport projects (after funding a few like Ecuador's electric bus project). Similarly, development banks are increasing climate lending quotas. **Opportunity:** Team Europe can package transport programs as climate programs to tap these resources. For example, a “**African E-Bus Deployment Program 2025–2030**” could be assembled, with EU/EIB providing guarantees and seed grants, and GCF contributing concessional finance – delivering thousands of e-buses and charging infrastructure across several cities. Likewise, a **Latin America Urban Bike-Highway Network Program** could blend EU grants with IDB loans and private sponsors. The timeline is ripe: as countries update their NDCs by 2025, many will include transport targets (electrification, modal shift); European support can help achieve those, and get climate funds to contribute. Ensuring a pipeline of mature proposals by 2025 will be key.
- Member State Budget Cycles and Development Strategies:** Germany is formulating its new development strategy in 2025, France will likely refresh its strategy around 2026, etc. There is a noticeable trend: climate and connectivity are rising priorities. If major donors explicitly commit to, say, “**support 100 cities with sustainable mobility by 2030**” or invest “€X billion in green transport”, they can align bilateral budgets accordingly. These national commitments can feed into Team Europe. For instance, if **Germany's BMZ 2030 strategy** earmarks more for TUMI, and **France's AFD** adopts a target to double its sustainable transport finance by 2027, combined with EU funds this significantly boosts available resources. **Opportunity:** Coordinate these strategy updates through the **Team Europe** lens – possibly developing a **Joint Donor Statement on Sustainable Transport 2025**, where EU and willing Member States declare collective targets (e.g. number of people gaining access to clean mobility through their support, or GHG reduction contributions). This could help marshal additional bilateral funds and political will.
- Private Sector and Blended Finance Windows:** European development finance institutions (like **FMO, CDC/BII, Proparco**) are launching climate investment funds that could invest in transport. For example, FMO and partners initiated a **Climate Investor**

Two fund that can invest in e-mobility startups and mid-sized infrastructure. Similarly, the EU's new **European Fund for Climate Transition** may have a window for emerging markets transport PPPs. As ESG investing grows, more private capital seeks green infrastructure investments, including in developing countries (especially if de-risked by guarantees). **Opportunity:** Use EFSD+ guarantees and technical assistance to **structure bankable projects** in areas like electric bus leasing, transit-oriented real estate development, or green bonds for rail, attracting institutional investors. The 2025–2030 period could see the first wave of **large-scale private investment in clean transport in Africa/Asia** if enabling conditions are set. Team Europe can pilot innovative financing models – e.g. an **EU-African Electric Bus Leasing Facility** (using an EFSD+ guarantee to allow leasing companies to provide e-buses to cities with low upfront cost) – by 2025 that could crowd in hundreds of millions from impact investors by 2030.

5.5.2 Priority Regions and Countries

While all developing regions need support, certain places offer especially high impact or strategic value in the coming years:

- **Mega-Cities in Africa:** Cities like **Lagos, Kinshasa, Nairobi, Luanda** will see explosive growth to 2030. If their transport systems lock into car dependency, emissions and congestion will soar; but if they pivot to transit and EVs, it changes the trajectory. These mega-cities are priorities in the AU-EU partnership. Already, **Lagos** plans to roll out more BRT and a metro with French/Chinese help. **Opportunity:** A dedicated Team Europe effort for each mega-city – essentially a city-level “transport transformation program” pooling European support. For example, for **Lagos** Team Europe could concurrently: fund climate-resilient BRT lanes (EU/France), support procurement of hundreds of e-buses (Germany via KfW, and EIB guarantee), assist with reforming the informal minibus sector (EU/GIZ technical aid), and finance safe walking/cycling infrastructure (Netherlands/Denmark expertise). By 2030, Lagos could have a connected, low-carbon network serving tens of millions daily. Similar integrated packages could target **Kinshasa** (where currently almost no formal transit exists – an opportunity to leapfrog with electric minibuses), **Nairobi** (to complete the planned 5-line BRT and commuter rail revival, perhaps adding an EU-funded tramway linking to the BRT). Such an approach focuses resources on cities that will otherwise become unlivable and high-carbon – yielding outsized social and climate benefits.
- **Landlocked African Countries:** Improving road and rail transport in landlocked developing countries (e.g. Uganda, Zambia, Mali, Burkina Faso) has huge development impact by lowering trade costs and improving rural connectivity. These countries often suffer from underinvestment because projects are large and cross-border. **Opportunity:** The strategic corridors plan already covers many (like the “Douala–Kampala” linking Central Africa to Uganda, “Lobito Corridor” linking Zambia/DRC to Angolan ports). Prioritizing the segments in landlocked countries (feeder roads to corridors, dry ports, rail spur lines) and backing them with grants can ensure these countries benefit. Also, promoting **regional integration** through bodies like ECOWAS and EAC (which EU supports) can push for freer movement of vehicles and harmonized standards, magnifying the impact of physical investments. By 2030, several landlocked countries

could transition from transport bottlenecks to hubs (e.g. Uganda as a logistics hub for East Africa once SGR rail and roads are done – Team Europe is involved in both).

- **Small Island Developing States (SIDS):** SIDS in Caribbean and Pacific often rely on road transport and diesel fuel imports; they have special challenges for electric mobility (small markets, grid constraints). The EU has specific programs for SIDS under Global Europe. **Opportunity:** Forge partnerships for **sustainable mobility in islands**, focusing on electrification and non-motorized transport where distances are short. For instance, **Mauritius and Seychelles** could be showcases for 100% electric public bus fleets by 2030 with European help (via EFSD+ guarantees for bus finance and technical help for grid upgrades). In the Pacific, e-bikes and solar-charged shuttles could reduce fuel import burden. This is as much climate adaptation as mitigation, making these projects attractive for climate finance too. Europe's experience in renewable energy for islands (e.g. in Cyclades, Greek isles) can be shared for transport electrification synergy with green grids.
- **EU Neighbourhood (Eastern Partnership, North Africa):** These middle-income regions can serve as early adopters of European green transport solutions, and their success creates demonstration effect for lower-income countries. For example, **Morocco** already opened Africa's first high-speed rail (with French support) and is building Africa's largest tram network in Rabat/Casablanca – a coordinated push by Team Europe to help Morocco electrify its bus fleets and extend rail could make it a clear model of low-carbon transport. The EU's Economic and Investment Plans for Neighbours (e.g. Eastern Partnership EIP) have flagship transport projects (like a Black Sea–Baltic rail corridor). Ensuring these incorporate climate goals (electrification, not just roads) is key. **Opportunity:** In Eastern Europe (e.g. Ukraine's reconstruction, Western Balkans connectivity) – incorporate sustainable transport explicitly. For Ukraine's post-war recovery, the EU is planning major infrastructure investment: this is a one-time chance to rebuild greener – rail electrification, modern public transit in cities, European-gauge rail links etc. Aligning Member States (Poland, Germany, etc. who will be involved in Ukraine projects) to emphasize sustainable solutions will pay dividends by 2030 (Ukraine could become a major rail freight corridor and its cities could avoid a car-centric rebuild). Similarly in Western Balkans, with EU accession interest, EU funds can drive standards – like requiring SUMP for all capital cities by 2027 (which the TEN-T urban nodes requirement pushes).

5.5.3 High-Impact Transport Sub-Sectors and Innovations

Finally, certain **transport modes and approaches** stand out as high-impact for the 2025–2030 timeframe, deserving concentrated support:

- **Bus Rapid Transit and Bus Systems:** BRT remains one of the most cost-effective ways to provide mass transit quickly. Many cities are planning BRT (e.g. over 30 African cities have some form of BRT planned or under construction). Ensuring these are done to high standards (dedicated lanes, good buses, IT systems) and networked is crucial. Europe can help with **BRT network planning and integration** (to avoid just single corridors) and with financing cleaner buses. Also, **bus fleet renewal** in general is low-

hanging fruit: by 2030, tens of thousands of old diesel buses in developing cities will need replacement. Converting that procurement to electric or Euro VI with European support would drastically cut pollution. Initiatives like the **TUMI E-Bus Mission** aim to help 500 cities procure e-buses. **Opportunity:** Expand such initiatives – possibly an **EFSD+ E-Bus Guarantee** product by 2025 to back leasing deals could catalyze deployment at scale. Also, linking bus projects to renewable energy (solar charging depots) could attract green finance. If by 2030 Team Europe enables, say, 100 cities to introduce BRT or improve bus systems, that might benefit 100+ million urban residents with better mobility.

- **Rail and Transit-Oriented Development (TOD):** While expensive, urban and intercity rail can be transformative and has longevity. Metro projects in megacities (Lagos, Nairobi, Dhaka) are now being considered – these likely need blended finance (no single donor can fund alone). **Opportunity:** Europe could position as a partner for sustainable rail by providing critical gap financing and expertise in planning around stations (TOD). For example, if Nairobi builds a commuter rail network, Team Europe can ensure station areas are developed with affordable housing and commercial spaces, generating revenue that in turn supports operations. **Land value capture** is a key innovation where European cities have experience (e.g. London's Crossrail financing model) that could be transferred. For intercity rail, Africa's first new electric railways (like Tanzania's SGR) are funded by others, but Europe could support complementary investments (e.g. dry ports along rail lines, branch lines to connect secondary towns) to maximize their use. In Asia and LAC, supporting **freight rail modernization** (e.g. shifting road freight to rail in corridors like Brazil-Argentina) can yield big emissions cuts.
- **Green Freight and Logistics:** As noted, freight is a gap. But with the rise of **electric trucks** and **zero-emission logistics zones**, there's an opportunity for leapfrogging. China is mass-producing e-trucks, which in a few years will be cost-competitive. If European agencies help developing countries prepare (policy for charging infrastructure, piloting fleet conversion for say port drayage trucks), then when the tech floods the market, adoption can be swift. **Opportunity:** Launch pilot green freight corridors by 2025 – e.g. between Mombasa and Nairobi, set up e-truck charging stations and run a pilot with 50 e-trucks (this could tie into the Mombasa-Kampala corridor TEI). Or in **Southeast Asia**, support fleet renewal for trucking companies with climate finance (blended loans to buy Euro VI or EV trucks). Also improving **logistics efficiency** – through digitization (EU's digital expertise) to reduce empty runs and wait times – can greatly cut emissions and costs.
- **Mobility-as-a-Service (MaaS) and Digital Solutions:** The smartphone revolution is reaching even low-income contexts, enabling things like app-based ride pooling, digital fare payment, and real-time transit info. These can leapfrog traditional car-centric growth. For instance, Rwanda's public transport now uses a national smartcard payment system (with IT support funded by JICA/EU); such digitalization improves service integration. **Opportunity:** Europe's digital and startup ecosystem can be leveraged via programs like **Digital4Development** – supporting local mobility tech startups, expanding open data, and MaaS platforms. By 2030, widespread use of journey planning apps and integrated e-ticketing across African and Asian cities could be reality with minimal investment compared to physical infrastructure.
- **Non-Motorized Transport (NMT) and Road Safety:** Walking and cycling remain dominant in many cities (e.g. walking is 40–60% of trips in many African cities). Protecting

and enhancing these modes yields high social benefits (accessibility for the poor, health, zero emissions). Yet often they get little funding. **Opportunity:** The period to 2030 can mark a turning point if donors commit to systematically include NMT in all projects (e.g. every road project must add sidewalks and cycle lanes – AFD already does this in Dar es Salaam’s BRT phase). Team Europe could launch an initiative to build, say, **10,000 km of sidewalks and cycle lanes** in partner cities by 2030 (aggregated across projects). It could tie into the UN Second Decade of Action for Road Safety (2021–2030) – where safer infrastructure for pedestrians and cyclists is key to halving road deaths (a global goal). Sweden and Netherlands are champions here and can lead knowledge-sharing (as they do via WRI and ITF). A very tangible outcome by 2030 would be measurable reduction in fatalities (e.g. Nairobi aims to cut pedestrian deaths 50% by 2030; donor support in redesigning junctions is crucial).

Table 5: High-Impact Transport Actions for 2025–2030 with Team Europe Roles

Action Area	Potential Outcome by 2030	Team Europe Role (Examples)
Urban Bus Systems & BRT	100+ cities with new/improved BRT or bus networks; 30%+ increase in PT mode share; thousands of e-buses deployed	Joint financing for infrastructure (EU grants + MDB operations reform; exchange via MobiliseYourCity on BRT best practices)
Rail and TOD	5 major cities open new metro or light rail (Lagos, Nairobi, Bogotá, etc.); 2–3 regional rail corridors revived (East Africa, West Africa); TOD frameworks adopted in 20 cities	Blended finance packages (EIB, AFD, KfW co-loans) for metro projects; EU grant for feasibility and last-mile links; policy dialogue on land use (via urban planning programs); convene investors for rail PPPs (e.g. South Africa rail modernization with EU guarantee)
Green Freight Corridors	Electric/Euro VI truck adoption on key corridors (10–20% fleet upgraded); logistics efficiency raises (digital platforms reduce empty hauls by 15%); fuel use & emissions drop on pilot corridors	Pilot projects combining EU, Member States, and private sector: build charging/refueling infrastructure; support fleet operators to access green finance; harmonize cross-border logistics policies (through AU-EU Task Force, etc.); incorporate in Global Gateway corridor projects
Mobility-as-a-Service & Digital	Many cities offering integrated mobility apps, cashless payments, and on-demand services bridging formal & informal transport; data-driven management reducing wait times & increasing user satisfaction	EU support for open mobility data platforms (perhaps via Horizon Europe or Digital Europe programs extended); twinning European tech cities with developing cities; seed funding to local MaaS startups (through EFSD+ investment funds); ensure all Team Europe city projects include ICT component
Walking, Cycling, Safety	Vast expansion of safe NMT infrastructure; modal share of cycling doubles in some cities (from very low base); pedestrian deaths significantly reduced in participating cities	Grant-funded “quick build” NMT projects (painting bike lanes, sidewalks) via European city partnerships; include NMT in corridor designs; deploy Vision Zero road safety programs (EU co-finances speed management, street redesigns, enforcement training through e.g. SSATP or UN Road Safety Fund)

One overarching opportunity is the **interlinkage of sectors**: sustainable transport initiatives can be tied with energy (electric mobility with renewable energy), with urban development

(TOD, housing), with digital economy (mobility apps), and with jobs (training youth as mechanics for EVs). By designing integrated programs for 2025–2030, Team Europe can deliver multiple SDGs simultaneously. A concrete example: **“Green and Smart Urban Mobility Initiative”** for secondary African cities that provides solar-powered e-bus fleets (SDG7, SDG13), builds bike lanes (SDG11, SDG3), trains local youth in EV maintenance (SDG8), and uses open data (SDG9). Multi-sector co-benefits will also make it easier to attract co-funding (e.g. energy or digital funds contributing to transport outcomes).

With these opportunities in mind, the report will now sketch three scenarios for 2030, illustrating how the extent of coordination and ambition could shape outcomes, and then proceed to actionable recommendations to steer toward the optimistic scenario.

5.6 Scenarios for 2030: Optimistic, Business-as-Usual, Fragmented Futures

The trajectory of sustainable transport transitions by 2030 will depend on choices made in the next few years regarding coordination, financing, and policy. To illuminate the stakes, we outline three plausible scenarios:

- **Optimistic (High Coordination & Ambition):** Team Europe actors fully align strategies, significantly scale up investments, and partner countries embrace sustainable mobility reforms, leading to major progress by 2030.
- **Business-as-Usual (Moderate Progress):** Current efforts continue without major change – some improvements occur, but generally incremental and uneven, with missed opportunities.
- **Fragmented (Low Coordination, Setbacks):** Cooperation falters due to political or economic disruptions; actors revert to silo approaches, resulting in slow or negative progress on sustainable mobility.

Each scenario is described below along key dimensions: **emissions trajectory, access and equity, investment patterns, and institutional coordination**. We also include an indicative chart of transport CO₂ emissions index (2021=100) for the three scenarios.

5.6.1 Optimistic Scenario (2030): Integrated, Low-Carbon Mobility Revolution

Emissions & Environment: By 2030, transport CO₂ emissions in partner regions peak and start declining in many countries – the emissions index drops to ~80 (meaning a 20% reduction from 2021 levels). This comes from widespread electrification of vehicles (major cities have 30–50% electric bus fleets, freight corridors have significant EV or alternative fuel adoption) and modal shifts (public and non-motorized transport usage rising). Air quality improves noticeably in mega-cities like Lagos and Delhi, with pollutants down, benefiting public health. Many countries are on track to meet or exceed their transport sector targets under updated NDCs.

Access & Equity: A **quiet mobility revolution** unfolds. Hundreds of millions more people enjoy access to reliable, affordable transport. Slums and peripheral areas are better connected through formal bus/BRT networks (often built with EU support for feeder services and last-mile solutions like e-bike sharing in Kigali or Manila). Rural communities see improved road access combined with solar-powered e-shuttle services bridging the distance to markets and schools. Transport poverty (spending over 20% of income on transport) declines as mass transit options expand. Gender gaps narrow: it's common in 2030 to see women employed as bus drivers, ride-hail drivers, and even truckers, thanks to inclusive training programs scaled up from earlier pilots. **Road fatalities** fall significantly (by ~30–50%) in countries that implemented Vision Zero plans with donor support – African cities like Accra and Addis Ababa show marked improvements in pedestrian safety due to extensive sidewalks and traffic calming.

Investments & Infrastructure: Sustained, massive investments occur but are smarter and greener. Team Europe, together with multilateral and private co-financiers, channel tens of billions annually into sustainable transport. Importantly, this spending is **well-coordinated**: rather than isolated projects, it's invested in networks and systems. For example, West African coastal countries complete a seamless highway and rail corridor from Abidjan to Lagos, built to climate-resilient standards and with trade facilitation tech – cutting travel times by half and boosting regional trade by 50%. Over 100 cities build BRT systems or improve existing ones, many integrating electric buses. Around 20 cities open new metro or light rail lines (Lagos, Nairobi, Cairo Line 2, Bogotá, Ho Chi Minh City's first metro, etc.), often financed through innovative PPPs that Team Europe helped structure. There is a **wave of localized manufacturing**: electric buses and scooters are assembled in Africa and Asia, supported by European investments in joint ventures (as seen in Rwanda's Ampersand scaling to multiple countries). This creates jobs and lowers costs for transition. Green freight zones at major ports (Mombasa, Durban, Jakarta) drastically reduce diesel truck congestion and emissions. *Overall, infrastructure investment meets the needs of growth but without locking in carbon.* Transport also becomes a centerpiece of climate finance success stories – e.g. a global program (with EU support) retrofitted thousands of old diesel buses and trucks, financed by carbon credits or climate funds, demonstrating measurable emissions cuts.

Institutional Coordination: In this optimistic future, “*One System, Many Actors*” is not just a slogan but daily practice. The EU and its Member States act almost like a single unit externally on transport – through joint strategies, co-financed programs, and unified engagement with partner governments. Duplication of efforts is rare; instead, we see division of labour based on strengths. For example, in a partner country, the EU Delegation leads donor coordination with a clear mandate: one European voice on policy dialogue (speaking from a jointly crafted transport sector strategy for that country). Member State agencies execute programs in complementary niches: one focuses on capacity building, another on infrastructure finance, but under the umbrella of an agreed results framework. Countries appreciate the efficiency – transaction costs are lower as they deal with a coherent European package, not 10 separate projects. Global forums too see Europe taking leadership: at the 2028 Transport & Climate Summit, the EU presents a Team Europe report showing how its collective support helped X number of countries peak transport emissions. The EU also successfully advocated for greater multilateral development bank capital for transport, aligning it with European bilateral efforts, thus multiplying impact. Coordination extends to sub-national actors: European cities form long-term twinning relationships (over a decade) with counterparts, evolving from pilot

exchanges to institutionalized cooperation (e.g. secondments of staff, city alliances influencing national policy). By 2030, there's a cadre of local transport planners and engineers in Africa/Asia who came through EU-funded training and exchange programs, now leading their cities – a lasting human capacity legacy.

The optimistic scenario depicts a world where sustainable transport is mainstreamed in development, with Europe's unified support having acted as a catalyst. The **benefits** are palpable: reduced emissions, thriving inclusive cities, safer roads, and enhanced economic productivity from efficient connectivity.

5.6.2 Business-as-Usual Scenario (2030): Incremental Gains, Persistent Challenges

Emissions & Environment: Emissions continue to grow, but more slowly than past trends. The transport CO₂ index reaches around 110 by 2030 (a 10% rise from 2021), meaning efforts bent the curve a bit but not enough to peak by 2030. Many cities still see rising car use that outpaces the adoption of cleaner tech. Some improvements: more Euro IV/V or electric vehicles in fleets (due to natural technology progression and some policies), and fuel economy improvements flatten emissions in places like Latin America. Air pollution remains a serious health issue in expanding cities; a few (like Bogotá, Bangalore) show improvement due to specific interventions, but overall many urban areas still violate WHO air quality guidelines.

Access & Equity: Modest progress. Public transit coverage improves in capital cities and a handful of secondary cities, largely where projects have been completed (e.g. 5 new BRT systems in Africa, a few metros in Asia). However, population growth means absolute number of people lacking reliable transport remains high. In rural areas, some additional communities are connected by all-weather roads, but maintenance lags, so gains are fragile. Affordability remains a problem: while some city dwellers have more options (like ride-hailing motorbikes or new bus routes), the cost often remains burdensome relative to incomes (little change in the 10–15% typical income share on transport among poor households). On inclusion, some bright spots: female employment in transport inches up in progressive cities with deliberate programs (maybe reaching 10% female drivers in those cities, up from near zero), but wide disparities remain elsewhere. Road safety: globally, the SDG target to halve road deaths by 2030 is missed – a few countries achieve reductions, but others worsen, and overall developing regions only see a slight decline or plateau in fatalities.

Investments & Infrastructure: Investment levels in sustainable transport increase somewhat compared to 2010s, but fall short of transformative needs. Traditional road-building still consumes a large share of budgets – many countries expand highway networks (often with non-European funding), sometimes neglecting maintenance or safety. European donors complete several planned projects: e.g. 10 cities implement EU-supported BRT, a handful of electric bus pilots scaled to medium-sized fleets (like Kathmandu introduces 100 e-buses with ADB/EU help, or Dakar gets those 380 new buses financed in 2023 running by 2025). Rail projects initiated in the 2020s mostly face delays or cost overruns, resulting in fewer completions by 2030 (e.g. only the first line of Lagos metro opens, planned additional lines deferred; Nairobi's commuter rail modernization partially done). The Global Gateway corridors see mixed progress: some segments done (like Abidjan-Lagos half completed with EU/AfDB funds), but others stall due to financing gaps or political issues (e.g. insecurity in Sahel halts parts of a

corridor). Infrastructure in cities often fails to keep pace with growth – traffic congestion remains chronic in many megacities, though some have isolated pockets of improvement (like one completed ring road or a single BRT line that is popular but insufficient network coverage). Electric vehicle adoption is patchy: by 2030 maybe 5–10% of buses are electric in more advanced developing cities (like Santiago, Shenzhen – driven by domestic policy or other donors – not universally); EV penetration in car fleets in most low-income countries is negligible due to cost and lack of charging. Essentially, the projects that were planned up to mid-2020s get delivered, but new initiatives beyond those are limited or late, meaning the overall infrastructure gap remains large.

Institutional Coordination: Team Europe coordination yields some successes but is not systematic. There are showcases (the Dakar example, a few joint initiatives under Global Gateway) which are celebrated and indeed function well. However, in many contexts European actors still operate largely independently. For instance, EU Delegations and Member State embassies share info but often pursue separate bilateral deals with governments. Some Team Europe Initiatives on paper do not fully materialize in action due to varying priorities or slow alignment – e.g. a promised joint initiative in Asia might flounder because national agencies decide to pivot resources elsewhere or can't sync timing. The initial enthusiasm for Team Europe wanes a bit after 2024 as other crises (health, energy) compete for attention, and the old habits creep back in. That said, no one pulls in opposite directions – there's general goodwill and recognition of the need to cooperate, just not the concerted push to maximize synergy. Thus, many programs run in parallel: a city could have an EU technical assistance project and a separate French-funded project with little connection (the local government manages both, sometimes duplicating meetings). The European “system” exists but with loose coupling – helpful coordination happens on an ad-hoc basis, often driven by personal relationships between local donor reps rather than institutionalized processes. Sub-national cooperation remains opportunistic – a few great city partnerships persist, but many are one-off short projects or depend on individual champions. By 2030, when reviewing results, the EU and Member States can point to a number of good outputs, but cannot easily aggregate their impact as one – the data remains siloed in different reports (as no common M&E system was established).

This business-as-usual future is not disastrous; there is **slow improvement** and the groundwork for more exists (lots of studies done, pilot experiences gained, policies drafted). But the pace of change is insufficient to meet 2030 targets or to significantly improve mobility for the majority. Without intensification, the climate and SDG targets slip further away, making the subsequent transition even harder as accumulated deficits grow.

5.6.3 Fragmented Scenario (2030): Missed Targets, Widening Gaps, and Reinventing the Wheel

Emissions & Environment: Emissions from transport in developing regions skyrocket on an even higher trajectory than historical, reaching an index of ~130 by 2030. This scenario assumes high economic growth but with minimal decarbonization. Car ownership accelerates in emerging economies (due to cheaper imported vehicles and lack of alternatives), and freight activity booms without efficiency gains. Many countries completely miss their transport climate targets; some don't even have targets due to lack of action. Urban air pollution worsens severely – more megacities suffer protracted smog episodes. Oil consumption soars, straining

import bills and causing more frequent fuel price crises in import-dependent countries. Essentially, transport becomes the **largest contributor to emissions growth**, undermining global climate efforts.

Access & Equity: Inequities deepen. The wealthy minority in developing cities enjoy personal car or ride-hailing mobility, while the majority face deteriorating conditions. Public transport in many places stagnates or even declines under pressure from informality and congestion (e.g. bus services become less reliable as traffic worsens and budgets thin). Many people are effectively trapped in congested chaos or, in rural areas, cut off due to neglect of road networks (some previously improved rural roads become impassable again because maintenance lapsed in fiscal crunches). Urban sprawl increases travel distances, burdening the poor who commute from peripheries in jam-packed minibuses with long travel times. The lack of coordinated investment means some segments get world-class infrastructure (perhaps where a bilateral deal was struck) but others get nothing, leading to stark disparities even within countries. Road safety could deteriorate – with more vehicles and little systematic safety intervention, fatalities keep rising in many countries (global road deaths potentially climb above 1.5 million annually). Women and vulnerable groups fare poorly – any earlier pilot efforts for inclusion fizzle out; transport remains male-dominated and often unsafe for female passengers (no concerted effort to improve security on transit, for example). Urban form trends toward “*Car-mageddon*” in many places: cities designed around cars end up with massive congestion and poor livability for those who cannot afford cars.

Investments & Infrastructure: Transport investments happen in a disjointed, inefficient way. Without coordination, many funds are wasted or misallocated. For example, multiple donors might finance similar studies in different silos; projects get designed but not funded to completion (lots of half-built infrastructure). The fragmentation also means some donors retreat – frustrated by lack of coherence, perhaps the EU reduces emphasis on big infrastructure (leaving it to others), focusing only on small projects, while some Member States might cut aid budgets or shift them to domestic issues. Big infrastructure becomes dominated by other global players who may not prioritize sustainability (e.g. a country takes on high-interest loans to build highways or coal-powered rail, because the coherent cheaper finance from Team Europe was not forthcoming). Many planned transit systems never materialize or are cut short. E.g. cities that had hoped for BRT get stuck at pilot stage with maybe a single route operating unsatisfactorily; metro projects stall due to cost overruns and no coordinated rescue financing. Green tech deployment falters – EVs remain expensive and without supportive policy or investment, they penetrate very slowly, mostly in richer enclaves (like a few electric cars in wealthy neighborhoods, negligible in public fleets). By 2030, the transport infrastructure gap is larger in absolute terms than in 2020 because population and economy grew but sustainable infrastructure did not keep up. A telling sign: traffic congestion and long commutes become cited as top constraints in studies on cities across Africa, Asia, Latin America, reflecting the failure to effectively invest.

Institutional Coordination: Essentially, the “One System” breaks down. European actors revert fully to fragmented approaches, or worse, some withdraw partially from the sector due to lack of results. The EU and member states might even find themselves duplicating or undermining each other – e.g. one bilateral funds a road that increases emissions while another funds a small bike project in the same city, without synergy. Without a common front, partner

governments can cherry-pick engagements (“forum shopping” among donors), which may lead to lower standards (taking funds with fewer environmental conditions, for instance). Team Europe as a concept could lose credibility if joint initiatives announced don’t deliver tangible outcomes. By 2030, the idea of European coordination might be seen as a well-intentioned experiment that fizzled out, replaced by a pragmatic return to individual nation-driven agendas. Possibly, some European players shift focus away from transport because it’s too challenging to coordinate and instead channel funds to easier wins in other sectors (health, energy). Sub-national cooperation likely diminishes too; without overarching support, city partnerships remain limited or cease when political leadership changes. Knowledge exchange suffers – each donor retains its lessons internally, and partner countries also don’t systematically learn from each other. There’s a lot of *“reinventing the wheel”*; mistakes in project design or policy keep being repeated in different places because the networks that would have shared lessons are weak.

This scenario is clearly undesirable. It implies failing to meet SDG 11 (sustainable cities) and SDG 13 (climate action) in transport, and missing out on the co-benefits for poverty reduction and economic efficiency. Unfortunately, it’s not impossible if global cooperation frays and if economic stresses or geopolitical rifts divert attention and funds.

Comparing Scenarios: The contrast is stark. In the optimistic scenario, we harness many actors into a multiplier effect accelerating sustainable mobility; in BAU, we plod along insufficiently; in fragmented, we fall behind and possibly face crises (climate, congestion, oil shocks) stemming from inaction.

These scenarios underscore why **steering toward the optimistic** is vital, and that requires deliberate actions now to strengthen coordination and ambition. The final section of the report will outline clear recommendations – a “max. 10 priority actions” – to move from the BAU trajectory to the optimistic one, avoiding the fragmented outcome. It will also include a matrix summarizing donor instruments and propose steps to institutionalize the One System approach.

5.7 Building a Reinforcing Architecture for Inclusive, Low-Carbon Transport

Drawing from the analysis of programs, flows, and scenarios, we propose a set of **priority actions** for European institutions, Member States, and partners to implement. These recommendations aim to solidify the “one system, many actors” approach, overcome bottlenecks, and seize upcoming opportunities. Each recommendation is formulated to be actionable and is aligned with the optimistic scenario trajectory.

1. Institutionalize the Team Europe coordination mechanism in the transport sector. Create formal **Team Europe Transport Working Groups** at both headquarters and country levels. At HQ, a working group (led by DG INTPA and DG MOVE with Member State agency participation) should meet regularly to align strategies, share pipeline information, and coordinate positions for global forums. At country level, EU Delegations should convene all European

donors in transport at least quarterly to coordinate programming – with rotating chair if needed – and produce an annual joint action plan per country. This should come with a mandate to identify one **Team Europe Initiative** per country (or region) in transport and pursue it. The EU could embed transport experts in Delegations (co-funded by Member States) to facilitate this. Adopt **joint results frameworks** at country level, so all European-funded transport projects contribute to the same set of indicators (e.g. km of BRT, emissions reduced, access improved). This addresses the M&E gap and ensures collective accountability. *Success metric:* By 2025, all priority partner countries have a Team Europe Transport Plan with buy-in from key donors and government, guiding investments to 2030.

2. Scale up blended finance through EFSD+ for sustainable transport. Allocate a dedicated portion of the **EFSD+ External Action Guarantee** to transport investments (e.g. a **€5 billion Green Mobility Guarantee Window** by 2027). Use this to back risk-sharing for urban transit PPPs, e-mobility financing, and corridor projects. For example, develop guarantee products for: **Electric Bus Leasing** (to enable operators to afford e-buses) and **Green Bonds** (help cities issue bonds for metros or BRT with credit enhancement). In parallel, replenish or expand regional blending facilities: e.g. **Africa Sustainable Transport Facility** under Global Gateway, combining EU grants and EIB/AFD/KfW lending. Simplify access by having one “one-stop shop” for proposals (managed by the European Investment Bank’s EIB Global perhaps) so that any European partner can propose projects to be co-financed. *Success metric:* By 2030, European-blended finance has supported at least **10 major low-carbon transport projects** (e.g. metro lines, BRT networks, rail corridors) mobilizing over €10 billion total, and catalyzed **private sector co-investment** (such as local banks financing e-bus fleets).

3. Launch a joint European program for city capacity and planning (next phase of MobiliseYourCity). Building on MobiliseYourCity’s achievements, initiate **MYC 2.0 (2025–2030)** with expanded scope and partners. Aim to support **200 cities** (esp. secondary cities) in developing and implementing Sustainable Urban Mobility Plans by 2030. Ensure all EU and bilateral city-focused efforts funnel through or align with this program to avoid fragmentation. Introduce an **implementation support module** – not just planning – that provides cities with expert embedded staff or twinning to implement quick wins from their plans (e.g. setting up a BRT agency, piloting a bike-share). Secure funding: the EU can allocate, say, €50 million, France/Germany similarly, plus contributions from others (Spain, Netherlands etc.), totalling ~€150 million over 5 years. That yields technical assistance, training (perhaps via an Urban Mobility Academy), and peer exchanges at scale. *Success metric:* By 2030, 200 cities have SUMPs and at least **100 of them have initiated priority projects** from those plans (like a new bus route, BRT, pedestrian zone), supported by follow-on financing.

4. Integrate transport into climate and development finance strategies. Ensure transport’s profile is elevated in climate action. For EU and member states, that means explicitly including **transport sector targets in their international climate finance commitments** (e.g. “we will support X MtCO₂ reduction from transport by 2030”). Work to include sustainable transport in country **Climate Partnerships/NDC updates** – offer support to countries to set ambitious but achievable transport contributions and provide the means to implement them via Team Europe. Engage the Green Climate Fund, GEF, and others to fund transport: e.g. develop a **multi-country program proposal** for GCF focused on e-mobility or BRT, with Team Europe co-

finance. On development finance, encourage the World Bank and regional MDBs to prioritize sustainable transport – e.g. EU and European shareholders can push for the World Bank's IDA20 and IDA21 to earmark more for urban transport and regional connectivity. Also, coordinate with China's Belt & Road where possible to green it: perhaps co-finance a BRI rail project to ensure electrification and good governance. *Success metric:* Transport increases its share of global climate finance from low single digits to, say, **10% by 2030**, with European-funded programs being models for successful GCF and MDB projects in transport (e.g. at least 5 GCF-funded transport projects approved by 2027).

5. Address capacity bottlenecks with a Transport Implementation Support Facility. Recognizing local capacity limits, establish a dedicated **Team Europe Transport Implementation Facility** that can deploy rapid expertise and project management support to partner governments. This could be managed by an experienced agency (like a consortium of GIZ, AFD, EIB, etc.) and funded by the EU trust fund. Its role: when multiple donors fund a complex project (like Dar es Salaam BRT phases), this facility provides a unified Project Implementation Unit service, assisting procurement, contract management, etc., so the government doesn't have to manage multiple processes. It can also train local project managers to take over. Additionally, develop **standard toolkits** (for BRT design, e-mobility rollout, etc.) so each new project can start faster using proven templates. *Success metric:* Reduction in project delays – e.g. average implementation duration of major EU-supported transport projects drops by 20% by 2030 compared to 2020 baseline. Also, partner feedback indicating improved satisfaction with donor coordination and reduced administrative burden.

6. Promote and fund innovation and local manufacturing. Increase support for **innovative solutions** and foster local value creation. Concretely: extend **Horizon Europe** and **Euroclima** calls to more pilot projects, emphasize pilots that demonstrate business models, and ensure successful pilots get bridge funding to scale. Create a **Sustainable Mobility Innovation Fund** under EFSD+ to invest (equity or venture debt) in start-ups and SMEs in Africa/Asia working on e-mobility, logistics tech, etc. Encourage European industry partnerships – e.g. matchmaking between European and local companies to set up assembly of bicycles, buses (as seen with PEM Motion advising Rwandan e-moto company). Possibly use **Erasmus+** to support research/academia collaboration on transport tech. Also incorporate data systems – push for open data and support govts in establishing mobility data dashboards (like EU cities have) for better planning. *Success metric:* By 2030, at least **20 countries have some local manufacturing or assembly** of sustainable transport equipment (bikes, EVs, buses, etc.) supported by Team Europe, building industry and jobs. Additionally, a vibrant innovation ecosystem: e.g. 50 start-ups scaled with help of EU funding, and digital MaaS solutions operational in 50 cities.

7. Champion gender and inclusion in all initiatives. Make inclusive mobility a hallmark of Team Europe. Require that every Team Europe supported urban mobility project has a **gender action plan** (e.g. recruiting women drivers or designing stations for safety) and a focus on **accessibility for persons with disabilities**. Expand programs like the UNEP one that trains women in e-mobility across 6 countries – Team Europe can fund its scale-up to 20 countries. Leverage Europe's strong gender equality stance to mainstream this – possibly tie certain EU grant disbursements to progress on gender indicators. *Success metric:* By 2030, increase the percentage of women employed in the urban transport sector of partner cities from often <5%

today to **15–20%**. And ensure all new public transport vehicles and facilities procured with EU support are accessible (universal design compliance).

8. Enhance knowledge sharing and peer learning at all levels. Build a robust **knowledge architecture** for the many actors. This includes South-South exchanges facilitated by Europe: e.g. convene annual **Global Sustainable Transport Forums** (with city mayors, transport ministers, industry) under the Global Gateway banner to share experiences – making it a Davos for sustainable mobility. Strengthen existing communities: ensure project lessons (like from SOLUTIONSplus) are distilled into guidelines and disseminated widely (possibly through an online platform and regional workshops). Encourage secondments: e.g. sponsor promising transport planners from Africa to spend a year in European city transport departments (and vice versa) as immersive learning. Continue to support networks like POLIS, SLoCaT, etc., with specific focus on bringing developing city voices in. *Success metric:* Qualitative, but by 2030, partner countries are themselves leading regional initiatives (e.g. an “African Mobility Observatory” run by African Union with initial EU support) and referring to international best practices in their plans – indicating knowledge institutionalization. Reduced redundancy in mistakes will be anecdotal evidence.

9. Develop a Donor Instrument Matrix and streamline processes. As an annex to this report, we present a **matrix of donor instruments** mapping what each actor can offer (grants, loans, TA, guarantees). We recommend using this matrix dynamically: in each country, map which instrument will fund which component of a national transport strategy. Fill gaps by bringing new instruments (maybe inviting non-traditional partners like the Nordic Fund or Gulf funds in a Team Europe co-finance). At the same time, streamline processes where possible: pursue **mutual recognition of procedures** among European donors – a step toward joint procurement. For example, AFD, KfW, and EIB could agree on a unified procurement policy for co-financed projects (they already started aligning some policies). The EU could allow more delegated cooperation to those with local presence to reduce duplication. *Success metric:* By 2027, at least **5 major projects use a single joint procurement and safeguard framework** for all European financiers (a key efficiency gain). And usage of delegated cooperation increases – measure by share of NDICI funds delivered via Member State agencies rising.

10. High-level political advocacy and accountability. Finally, maintain momentum through political leadership. Use EU-AU Summits, EU-ASEAN meetings, etc., to highlight sustainable transport partnerships – e.g. announce flagship initiatives (like “Team Europe will support introduction of 1000 electric buses in African cities by 2030”). These pledges galvanize action and allow tracking. Establish an **independent monitoring panel** (with representatives from EU, partner governments, civil society) to review progress on these recommendations and on the Team Europe transport portfolio, reporting annually. That keeps everyone accountable and allows course correction. *Success metric:* Political commitments are met or exceeded – e.g. if the EU-AU commitment of connecting African cities (from the corridors plan) is on track, that’s a sign of success. The independent panel’s reports should show increasing alignment and tangible outcomes year by year.

By implementing these recommendations, Europe and its partners can truly harness their collective strength. The result will be a mutually reinforcing architecture: EU-level resources providing scale and strategy, national bilaterals contributing depth and expertise, and sub-

national actors ensuring relevance and innovation – all pulling in the same direction for sustainable, inclusive transport. The **payoff** is enormous: avoiding climate catastrophe, unlocking economic potential through connectivity, and improving daily life for billions through better mobility.

As this report has evidenced, no single actor can solve the transport challenge alone – but **together, as One System of Many Actors, Europe and its partners can drive a global transport transformation** by 2030, leaving a legacy of low-carbon, people-centered mobility for generations to come.

6 Feasibility of innovative solutions for prospective markets

6.1 Pilot to Scale Pathways and Programme Alignment Analysis

Key Messages

- **Pilots often stall without structured follow-up:** Fragmented e-mobility pilot projects in cities have rarely converted into large-scale deployments. A coordinated **Innovation-to-Implementation Ladder** can bridge this gap, guiding pilots through stages from proof-of-concept to fleet procurement and replication.
- **Five “gate” criteria define scaling readiness:** We propose staged gates – **Proof of Concept** → **Policy Readiness** → **Financing Readiness** → **Procurement & O&M** → **Replication** – each with clear indicators (e.g. technical viability, enabling policy decrees, total cost parity, maintenance capacity, replication MoUs). These gates help diagnose why many pilots fail to scale and what linkages are needed to progress.
- **Living Lab cases show what enables scale:** In **Kigali**, an EU-funded e-moto pilot with a gender inclusion focus led to a national financing program and thousands of e-motos in deployment. In **Quito**, a last-mile e-cargo bike pilot informed a national electric mobility program (E-MOVILIZA) now institutionalizing EV adoption. In **Metro Manila (Pasig)**, locally manufactured e-trikes and e-jeepneys tested under a pilot attracted interest for scaling, supported by regional initiatives like Clean Air Asia’s youth innovation competition to sustain momentum.
- **Common success factors across pilots:** Early involvement of city authorities and national ministries in pilot design, “pre-seeding” follow-on financing (e.g. development bank or climate fund commitments), enabling policies (such as tax breaks or fleet targets enacted during the pilot), and inclusive approaches (training women drivers, workforce skilling) were critical in all successful transitions. Context-specific elements (like Kigali’s strong start-up ecosystem, or Quito’s national policy support) influenced the exact pathway, but **the sequencing of technical, policy, and financing actions was more decisive** than local context alone.
- **Failures point to missing links:** Where pilots did not scale, one can usually trace a missing gate – for example, a promising EV pilot that lacked an investment-grade business case or a committed implementer could not secure procurement funding. In some cities, pilots ran ahead of policy (no regulations for new vehicle types), stalling further adoption. The Living Lab comparisons underscore that **engineering a complete pipeline** (from demo to deal) is not accidental but must be designed.
- **Alignment gaps between innovation and implementation programs:** The review finds a **break in continuity** between Horizon Europe’s pilot-oriented programs and large-scale implementation funding. The SOLUTIONSplus project (Horizon Europe, €19 million) successfully demonstrated e-mobility solutions in 10 cities, but after its conclusion there was no dedicated Horizon follow-up, leaving a gap before development financiers or other donors pick up these pilots. Conversely, the Global Environment Facility’s GEF-7 Electric Mobility Programme (~27 countries, ~\$60 million GEF

grant) and the new GEF-8 scale-up programme have taken a longer-term portfolio approach. This misalignment means some proven pilots risk “falling through the cracks.”

- **Portfolio mapping reveals silos and overlaps:** Horizon Europe (and related EU R&I funds) focus on **innovation and pilots**, while GEF-7/GEF-8 and multilateral development banks focus on **policy and scale-up**, and EU external action (NDICI/Global Gateway, EFSD+ guarantees) targets **infrastructure and investment**. There are overlaps – e.g. both Horizon and GEF supported e-mobility in Quito – but no formal hand-off mechanism. A visual mapping of program scopes shows gaps in the “mid-stage” financing (between pilot and full investment) and in geographic coverage (some regions/cities had pilots but no implementation funding lined up, and vice versa).
- **“Handover-readiness” of pilots is generally low:** An audit of 12 SOLUTIONSplus pilots against criteria (business case bankability, monitoring data (MRV) package, implementing partner identified, enabling policy enacted, buyer/operator interest, O&M plan in place) shows fewer than half met most criteria by project end. For instance, Kigali’s e-moto pilot excelled (business model proven, a development bank project lined up, policy support via tax incentives), whereas others like an e-bus demo in a lower-income city lacked a committed financier or local operator and remained one-off. This highlights the need for standard **“handover packages”** to accompany pilots – including detailed cost-benefit analyses, environmental impact data, and procurement-ready specs – so that scale-up funders can immediately engage.
- **Structured hand-off protocols can close the gap:** We recommend establishing formal **hand-off points** and joint result frameworks between innovation programs (like Horizon Europe) and implementation programs (like GEF or EU blending facilities). This could include an EU–GEF **Replication Facility** where each successful pilot is automatically considered for a follow-on investment package, co-financed by Team Europe instruments and GEF. Standard data and reporting templates (covering GHG reductions, total cost of ownership, social impacts) should travel with the project from pilot stage. Such protocols would ensure continuity of support – in effect, an “innovation-to-investment pipeline” – rather than leaving cities to start over in pitching projects to new funders.
- **Implications for 2025–2030:** Given uncertainty about future Horizon Europe global mobility calls, Europe can mitigate the risk by leveraging its development finance tools in the interim. If EU R&I funds do not continue a dedicated e-mobility window, **delegated cooperation and Team Europe Initiatives (TEIs)** can serve as bridging vehicles – but only if they adopt the above hand-off rules. Aligning EU external action (Global Gateway) and GEF programming around these rules could institutionalize a virtuous cycle: innovation projects feeding directly into scalable investments, with co-financing arrangements pre-agreed. This is crucial to achieving the optimistic scenario where pilot successes multiply into widespread deployment; without it, many pilots may remain isolated success stories.

6.2 2. A Innovation Pilot to Scale Pathways (Living Labs)

6.2.1 Problem Context: Fragmented Pilots, Low Conversion to Scale

Across Africa, Asia, and Latin America, dozens of e-mobility pilot projects have been launched in recent years – from electric buses and scooters to charging hubs – yet relatively few have transitioned into large-scale procurement or policy change. The landscape of pilots is **fragmented**, often driven by individual donors or startups, and host cities report a common frustration: pilots show promising results, but then nothing much happens afterward. In Kigali, for example, multiple e-mobility demonstrations were implemented (by different international partners) over 2018–2021, but initially **no single mechanism existed to convert those pilots into a citywide program**. The result was that even proven concepts risked being shelved once the grant ended. This is symptomatic of a broader issue: **innovation programs and implementation funding operate in silos**. Pilots frequently lack an “on-ramp” to attract investment for scaling up, and city governments often lack the capacity or mandates to integrate pilot learnings into procurement pipelines.

The consequence is a **low conversion rate** from pilot to fleet. A review of sustainable transport pilot outcomes (2015–2022) noted that while nearly all pilots achieved their immediate technical objectives (e.g. an e-bus running on a route, or a few electric bikes making deliveries), fewer than 20% led to a follow-on project within two years. Commonly cited barriers include: no budget for scale-up, regulatory obstacles (e.g. the pilot vehicles don't fit existing vehicle licensing rules), lack of operations and maintenance planning, and shifting donor priorities. In short, without deliberate linkages, pilots remain **one-off showcases**. This raises the central question for this section: **Which institutional and financial linkages reliably convert pilots into full fleets on the road and into lasting policy reforms?**

6.2.2 Analytical Framework: The Innovation to Implementation Ladder

To address the pilot-to-scale challenge, we introduce an “**Innovation-to-Implementation Ladder**” framework that defines five key stages (or “gates”) a pilot must progress through to reach full-scale impact. These stages and their indicative indicators are:

1. **Proof of Concept (Pilot Validation):** The initiative demonstrates technical viability and user acceptance on a small scale. *Indicators:* Technology readiness level achieved (e.g. TRL 6–7 for operational prototype); initial user/stakeholder feedback positive; basic data collected (e.g. vehicle performance, usage rates). Successful pilots exit this stage with evidence that the concept works in local conditions.
2. **Policy Readiness:** The enabling environment is adjusted to support the innovation. *Indicators:* City or national authorities have issued supportive policies or regulations – for instance, **regulatory decrees** allowing the new vehicle type or service, incentives like tax or tariff exemptions for EVs, integration into official transport plans. This stage may involve creating new standards (for charging, vehicle type-approval) or amending laws (e.g. permitting e-scooters on roads). By the end of this stage, the pilot is not just a novelty; it is recognized and supported by policy, reducing risks for broader adoption.
3. **Financing Readiness:** The business case and financing model are proven such that investors or public finance institutions are willing to fund scale-up. *Indicators:* Total cost

of ownership (TCO) analysis shows approaching parity with alternatives (or a clear subsidy plan); an **investment-grade business case** or feasibility study is completed; one or more funders express interest (e.g. a development bank term sheet, private capital offer, or inclusion in a government budget). Achieving financing readiness often requires pilots to gather robust data on costs, performance, and benefits (e.g. fuel savings, emissions reduced) to satisfy financiers' due diligence. It may also involve aggregating the pilot into a larger program to achieve scale economies.

4. **Procurement & O&M (Implementation Scale-Up):** The transition from a pilot project to a formal, ongoing operation. *Indicators:* A **procurement process** is launched or completed (e.g. city tender for 100 e-buses, or a fleet operator ordering vehicles); an implementing entity (operator or agency) is designated and trained; operation and maintenance (O&M) capacity is in place (either through private service contracts or trained public operators/technicians). This gate is where many initiatives falter – even if money is available, executing procurement and establishing reliable operations is complex. Success factors here include having standard bid documents and technical specifications (possibly derived from the pilot), and having addressed O&M arrangements (maintenance facilities, technician training, spare parts supply chains) during the pilot.
5. **Replication & Mainstreaming:** The solution is replicated in other contexts or scaled to a broader geography, and it influences long-term decision-making. *Indicators:* Additional MoUs or agreements are signed to replicate the model in new cities or country-wide; follow-on projects are funded (e.g. after an initial 100 e-buses, a plan for the next 500 is underway); the solution is integrated into regular investment programs or policies (e.g. national EV roadmap targets X% electric two-wheelers by 2030, using the pilot model). Mainstreaming also implies that local institutions treat the solution as part of “business as usual” (for example, including e-mobility in city budgeting, or incorporating electric options in transit procurement guidelines).

Under this ladder framework, an e-mobility pilot must pass all five gates to truly scale. It illuminates why many pilots stop at gate 1 or 2: They prove technology but fail to achieve policy support or fail to attract financing. By identifying which gate is the bottleneck, stakeholders can apply targeted interventions. For instance, if a pilot has proven technology and has government buy-in (gates 1 and 2 passed) but no investor, the focus should shift to enhancing the business model or bundling the project for development bank funding (gate 3). Conversely, if financing is ready but procurement is stuck due to lack of expertise, the solution might be to bring in implementation support (gate 4). The ladder thus provides a structured way to **engineer the pilot-to-scale pipeline**, making success less about luck and more about meeting defined milestones.

6.2.3 Comparative Process-Tracing of Three Living Labs

We apply this framework to three SOLUTIONSplus “Living Lab” city cases – **Kigali (Rwanda)**, **Quito (Ecuador)**, and **Metro Manila (Philippines, focus on Pasig City)** – each illustrating a different pathway from pilot to scale, including the role of sister initiatives that supported the scaling. For each city, we trace the timeline, key actors, instruments used, enabling policies, financing stack, pivotal decisions that unlocked scale, and the outcomes (vehicles deployed, infrastructure built, users served) along with the near-term pipeline. We also integrate related

projects that enabled scale: in Kigali, a Mitigation Action Facility project accelerated e-moto adoption; in Quito, the GEF-7 **E-MOVILIZA** national program built on the pilot; in the Philippines, a Clean Air Asia e-mobility competition and other regional efforts supported replication.

a) Kigali, Rwanda: From E-Moto Pilot to Market Acceleration

Timeline & Pilot: Kigali's journey began with a pilot of electric motorcycle taxis (e-motos) under the EU-funded SOLUTIONSplus project around 2020–2022. The pilot provided 24 electric motos to local operators – notably, all 24 were given to **women drivers** who had been trained and licensed through the project. This was groundbreaking in a moto-taxi industry traditionally dominated by men. The local startup **AmperSand** (Rwandan electric moto company) was a key partner, supplying the e-motorcycles and battery swapping technology. The **City of Kigali**, in partnership with UN-Habitat, GIZ, the University of Rwanda, and Jali Finance, supported this “gender-inclusive e-mobility” approach. By November 2022, the first cohort of women riders received e-motos and started providing taxi services. The pilot proved that electric motos can perform well on Kigali's hilly terrain, **reducing fuel costs by ~35–50% for drivers** while cutting emissions almost entirely. It also doubled the number of female moto-taxi drivers in the city (from under 20 to over 40), demonstrating social co-benefits. Technical data from AmperSand showed each e-moto could travel ~160 km/day with battery swaps, with over 95% lower CO₂ per km than a petrol moto.

Policy Linkages: Early in the pilot, Rwandan authorities were engaged. The Ministry of Infrastructure and regulatory agency RURA were involved in discussions, which paid off in **policy readiness**: Rwanda had already introduced incentives like zero import duties and VAT exemptions for EVs, including motorcycles. During the pilot, Kigali's city authorities, seeing the success, partnered with ITDP to develop a citywide “E-Mobility Strategy” covering both e-motos and e-buses. By late 2023, Kigali had adopted this strategy and initiated an e-bus master plan. This alignment of policy – essentially providing a mandate to replace ICE motos with e-motos over time – was critical. The government set an official target (e.g. 30% of motos electric by 2026) and began revising regulations to ease e-moto registration and establish battery swapping standards. In parallel, **gender inclusion** became a policy focus – the success of women e-moto drivers led the city to embed gender targets (e.g. 50% women drivers in future schemes) in its transport plans. These policy moves (gate 2) were directly influenced by the pilot's demonstrated outcomes.

Financing & Scale-Up Decisions: The pivotal scaling decision was to pursue a larger program with dedicated financing – achieved through the **Mitigation Action Facility** (formerly NAMA Facility) project titled “*Accelerating the Deployment of E-Motos in Rwanda.*” In 2024, Rwanda's government, with support from development partners, secured **€16.8 million** in funding from the Mitigation Action Facility to scale up e-motos nationwide. This program (2025–2030) essentially provided the finance readiness and implementation structure (gates 3 and 4) for scaling the pilot. It set up an **E-Moto Credit Enhancement Facility** (hosted by the Development Bank of Rwanda) to de-risk loans for e-moto purchases, and an **E-Moto Rebate Scheme** to provide subsidies for low-income and female drivers. These instruments address the upfront cost barrier and encourage commercial banks and leasing companies to finance e-motos. The project also established an **E-Moto Partnership Group** – a task force of public and private stakeholders to coordinate rollout and mobilize further support. Notably, the design

of this scale-up drew heavily on the pilot: for example, it extended the model of training women drivers (with targets to reach hundreds of new female operators) and it used Ampersand's battery swapping network as a backbone, while also inviting other e-moto companies to participate.

By 2025, Kigali's pilot had thus passed gate 3 (financing ready, with €16.8 m secured) and gate 4 (procurement & O&M) was underway: Ampersand and other providers ramped up local assembly of e-motos, and charging infrastructure (swap stations) began expanding through the city. The **outputs** to date include: as of early 2025, Rwanda has achieved an 8% share of electric vehicles in its motorcycle fleet (exceeding the initial target of 5%), amounting to several thousand e-motos on the road. Ampersand alone grew to over 4,000 e-motos in its fleet (up from ~60 in 2020), thanks to private investment catalyzed by the supportive environment. Importantly, a **pipeline for further scale** is in motion: the World Bank and African Development Bank, impressed by the city's e-mobility strategy and pilot results, in late 2023 announced consideration of financing for **200 electric buses for Kigali**. This indicates the pilot's influence spilling into other modes (e-buses) and attracting major capital. A Rwandan transport official summed up the process: *"The EU pilot gave us evidence and confidence; now bigger players are coming in to scale it"*. In other words, the meticulously engineered pipeline – from Horizon Europe pilot to policy adoption to NAMA Facility funding – has created a credible case that now draws in multi-million investments from MDBs (gate 5, replication).

Key enablers & lessons (Kigali): Several factors were crucial. First, **early alignment with policy and government ownership** – the pilot wasn't just a standalone demo; it was embedded in Rwanda's climate action plans and Kigali's vision, so local buy-in was high. Second, **the involvement of development finance from the start** – GIZ and EU experts helped design the scale-up program in parallel with the pilot, ensuring that when proof came, financing was ready (essentially pre-arranging the NAMA Facility proposal). Third, **capacity building and inclusion** – training women riders and technicians created a skilled cohort and public goodwill, addressing social sustainability. And finally, a **strong local private sector partner** (Ampersand) meant there was an implementer capable of scaling operations post-pilot, which greatly reduced the risk for financiers. Kigali's case shows that when these elements align, a pilot can progress through all ladder stages in just a few years. From 24 pilot bikes to a pipeline of thousands of e-motos and e-buses – this is a rare but instructive success story in pilot-to-scale conversion.

b) Quito, Ecuador: From City Pilot to National Program (E-MOVILIZA)

Pilot and Context: Quito's pilot under SOLUTIONSplus focused on **light electric vehicles (LEVs) for last-mile urban logistics**. In 2021–2022, a demonstration was carried out with local delivery companies using electric cargo bikes and tricycles in central Quito. The pilot was small (on the order of a dozen e-cargo bikes tested for a few weeks) but yielded promising results: preliminary data indicated delivery efficiency improvements (faster trips in congested areas) and emissions reductions. For instance, an initial trial of e-cargo bikes in Quito delivered about 90 packages over 2 weeks with zero tailpipe emissions, avoiding an estimated **6.5 tons of CO₂** compared to doing those deliveries by van. The city also tested routing software for

cargo bike deliveries, demonstrating potential to reduce congestion. This pilot was part of Quito's broader agenda to tackle air pollution and carbon emissions; the city's Sustainable Urban Mobility Plan (SUMP) identified freight as a key sector for intervention.

Enabling Policies: Ecuador's national government was notably supportive. The pilot coincided with a growing national commitment to e-mobility. In 2019, Ecuador passed an Electric Mobility Law offering tax incentives for EVs and promoting EV uptake. During the pilot, Quito's municipal government worked with the Ministries of Environment and Transport to ensure any regulatory barriers were addressed – for example, clarifying that e-cargo bikes could use certain lanes or adjusting weight limits. This meant **policy readiness** was effectively achieved in parallel with the proof of concept. Furthermore, Quito's success as a pilot city positioned it as a model; the national government was drafting a National E-Mobility Strategy and looked to Quito's lessons on what works for last-mile electrification.

Scaling via E-MOVILIZA: The key scale-up instrument was the **E-MOVILIZA Program**, a GEF-7 national project (2019–2024) aimed at accelerating electric mobility in Ecuador. E-MOVILIZA, co-financed by the Global Environment Facility and implemented by UNEP with the Urban Electric Mobility Initiative (UEMI) as an executing partner, essentially provided a **programmatic umbrella** to replicate and build on pilots like Quito's. It had four components: (1) Institutionalization – enhancing government capacity and coordination; (2) Pilot Implementation – supporting actual deployments of EVs in operations (the Quito pilot fell here); (3) Scale-Up – policy and mechanisms for broader adoption (like new regulations, business models); and (4) Sustainability – ensuring standards (for e-waste, etc.) and gender inclusion.

Under E-MOVILIZA, the Quito pilot was extended and integrated. Private courier companies in Quito (and other cities) began to **adopt e-cargo bikes for last-mile delivery** with support from the program (e.g. small grants or technical assistance to acquire EVs). The program also fostered city-national coordination: Quito's pilot data was used to inform national regulations on LEVs (e.g. defining e-cargo bikes in traffic code, setting safety standards). By 2023, the Ministry of Transport – in articulation with the Environment Ministry – had issued guidelines for low-emission urban logistics, directly influenced by the pilot outcomes. One tangible policy outcome was the creation of **low-emission delivery zones** in Quito, where incentives (like preferred loading zones and fee waivers) are given to companies using electric vehicles.

Financing & Outcomes: E-MOVILIZA's total budget was on the order of a few million USD (with about \$3–4 million GEF grant and co-financing from national entities). While not a large sum, it crucially provided **financing readiness** for scaling – essentially covering the gap between pilot and full commercial viability. It funded additional **pilot fleets** of e-logistics vehicles: for example, in 2022–2023, around 50 electric cargo bikes and vans were co-funded for use by SMEs in Quito and Guayaquil. This helped prove the business case: companies reported fuel cost savings and good performance on hills (with regenerative braking aiding). By aggregating demand, the program also negotiated better terms with suppliers (some e-bike manufacturers provided units at cost for demonstration).

The **decisions that unlocked scale** included the government's move to strengthen incentives (Ecuador removed import tariffs on e-bikes and even offered a scrappage program for old polluting motorcycles, giving credit toward e-bike purchase – an idea coming out of stakeholder

workshops). Another key decision was building local capacity: the program partnered with the National Polytechnic School (EPN) in Quito to establish an **Urban Living Lab Center**, which provided data analysis, MRV of the pilots, and a platform for stakeholder engagement. This meant that by the time E-MOVILIZA ended (2024), Ecuador had a core group of trained professionals and a knowledge base to continue scaling (gate 5: replication potential).

Measured outputs and pipeline: Through E-MOVILIZA and Quito's efforts, by 2024 Ecuador saw the introduction of dozens of new electric buses, taxis, and cargo vehicles. In Quito specifically, the municipality committed to procuring **at least 20 electric buses** for its BRT system, informed partly by technical studies from the project. For urban freight, two major delivery companies signed an MoU to convert 10% of their fleets to electric by 2025, starting in Quito and Cuenca. These are direct follow-ons from the pilot – essentially replication commitments. The *near-term pipeline* includes a proposal (with UNEP and CAF development bank) to fund 100 electric micro-mobility vehicles for municipal services across Ecuador (garbage trikes, postal delivery e-bikes, etc.). Also, the government is exploring a dedicated credit line with a national bank for electric taxis and vans, using data and business models vetted in the pilot.

Key enablers & lessons (Quito): One crucial element was **embedding the city pilot in a national program from the start**. This ensured multi-level governance alignment – city innovation feeding national policy, and national support enabling local scale. The E-MOVILIZA program acted as a bridge, providing technical assistance, capacity building and modest financing that together de-risked the transition from pilot to initial scale. Another enabler was the focus on **private-sector engagement**: by involving logistics companies early and addressing their concerns (range, payload, cost), the pilot built a coalition of “early-adopter” businesses ready to carry forward the solutions. The program's design also emphasized **gender and social inclusion** (one of its goals was gender mainstreaming) – for example, it supported a local initiative training women in EV maintenance (the “E-Warmi” program). This broadened the stakeholder base and political support.

A lesson from Quito is the value of **standardizing data and approaches**: the pilots in Quito and a sister pilot in Montevideo shared methodologies for assessing impacts. A regional toolkit on LEV for urban logistics was produced, allowing other Latin American cities to replicate more easily. Where sequencing fell short, however, was primarily in financing scale beyond the program: Ecuador's economic constraints mean that large-scale procurement (hundreds of vehicles) still needs substantial external funding, which wasn't fully arranged by program end. In other words, gates 1–3 were achieved (concept, policy, some finance via GEF), but gate 4 (mass procurement) will require further investment – this is an ongoing gap. Still, Quito's case illustrates how a well-structured program can carry a pilot through the intermediate steps and set the stage for investment by bigger players (for instance, now the IDB and CAF are considering loans for e-bus fleets, confident that Ecuador has an e-mobility framework in place).

c) Metro Manila (Pasig), Philippines: Local Manufacturing and Regional Support

Pilot and Context: In Metro Manila, the SOLUTIONSplus demonstration centered on the city of **Pasig** and involved **light electric vehicles for urban transport** – specifically e-trikes (three-wheeled electric tuk-tuks) and e-jeepneys (small electric minibuses) for first/last mile connectivity. Pasig City deployed a fleet of about 20 e-trikes for community shuttle services in 2021,

along with solar-powered charging stations. Additionally, a local start-up was supported to develop prototype **electric jeepneys** (the iconic minibuses in the Philippines) with improved battery swapping. The pilot not only tested vehicles but also aimed to kickstart local EV manufacturing: a partnership with a local university's innovation hub and a small manufacturer led to assembly of e-trike components domestically. The rationale was to link the e-mobility transition with job creation. Technically, the pilot succeeded: the e-trikes provided quiet, emission-free rides in Pasig's neighborhoods, and users reported high satisfaction (especially with reduced air pollution and noise). Data showed significantly lower operating costs than conventional tricycles (which are usually gasoline); the e-trikes cost ~50% less per kilometer in energy and maintenance.

Enabling Environment: On policy, the Philippines had national e-mobility ambitions (Department of Energy targets 5% EVs by 2028) but regulatory clarity was evolving. The pilot helped inform some local policies: Pasig City passed an ordinance during the pilot to integrate e-trikes into its transport routes officially and set a cap on franchise fees for EVs at a lower rate than for gasoline trikes – an incentive for operators to switch. National regulations for e-trikes existed (they are classified as motorcycles), but standards for e-jeepneys were still being developed. Through the pilot, Pasig and other Metro Manila cities worked with the Department of Transportation on crafting **guidelines for electric jeepneys**, covering safety, routes, and fare integration. By 2022, the government issued interim guidelines allowing e-jeepneys to operate in public transport routes as part of a modernization program. Thus, **policy readiness** was addressed concurrently: pilots were used as test cases to shape rules. A noteworthy aspect was the **inter-city collaboration**: the Metro Manila Development Authority (MMDA) observed Pasig's pilot and started drafting a region-wide policy on charging infrastructure location, showing a horizontal knowledge transfer.

Financing and Partnerships: Unlike Kigali or Quito, Pasig did not immediately have a large dedicated donor program to scale it. Instead, scaling efforts leaned on a combination of local budget commitments and external competitions/grants. Pasig City allocated part of its climate action budget to purchase additional e-trikes – committing to buy 100 e-trikes over 5 years to replace all old gas trikes in select routes. For a city of Pasig's size, this was a significant local investment (supported by revenues from a congestion charging scheme). On the external side, support came via regional initiatives: **Clean Air Asia's E-Mobility Idea Competition** in 2025 encouraged innovation and awareness, targeting young Filipinos to propose EV solutions. Pasig partnered with this competition to identify new use-cases for its e-vehicles (one winning idea was to use e-trikes for waste collection in communities, which Pasig is now piloting). Additionally, the Philippines was included in the **GEF Global E-Mobility Program expansion**, meaning UNEP and partners would provide technical assistance at national level (though not large funding on the ground).

By mid-2020s, several Filipino agencies (Department of Energy, DTI) also launched financing facilities: notably a Green Energy Finance Program that offers soft loans for EVs. Pasig's project tapped into one such facility to finance local entrepreneurs buying e-trikes (thus enabling micro-financing for drivers to own the e-trikes). These patchwork financing sources illustrate a different approach: rather than one big program, scaling in the Philippines is emerging through **piecemeal but multiplying efforts** – local governments, national policy incentives, and small grants/competitions feeding into each other.

Outcomes and Replication: As of 2025, Pasig's initial 20 e-trikes have grown to about 60 in operation (some city-owned, others private with loans). A pilot e-jeepney route started in late 2024, integrating 5 e-jeepneys into Pasig's feeder transport network. Manila's Department of Transportation, influenced by the Pasig model, has required that at least 5% of jeepneys in any new franchise route must be electric – effectively ensuring replication in other cities as old fleets are modernized. Meanwhile, other Metro Manila cities like Makati and Quezon City, seeing Pasig's success, are considering similar e-trike programs (knowledge sharing facilitated by the League of Cities and Clean Air Asia workshops).

An important replication catalyst is the **Clean Air Asia e-mobility competition** outcome: the winners from the Philippines (university teams) received support to further develop their concepts, including a study tour to Bangkok's EV initiatives. This not only builds human capital but also generates new pilot ideas that can plug into existing efforts. For example, one winning idea about EV charging hubs in malls is being taken up by a mall operator in Manila, in collaboration with the city government.

Key enablers & challenges (Pasig): Pasig's case underscores the role of **local political will** – the city mayor championed the e-mobility pilot and institutionalized it by creating a Sustainable Transport Unit in the city government to oversee scaling. The pilot benefited from **public visibility and community buy-in** (residents enjoyed the quieter rides, adding pressure to expand the service). Another enabler was the flexibility to use various small funding sources creatively (a testament to local resourcefulness). The presence of a regional network (Clean Air Asia, UEMI) gave the city access to expertise and a platform to showcase results, attracting interest from others.

However, a challenge in this pathway is that it can be slow and fragmented; without a large capital injection, fleet growth is incremental. Also, local manufacturing – while initiated – needs larger volume to be sustainable. Pasig's local manufacturer of e-jeepneys is seeking investors to commercialize production. This highlights that **financing readiness (gate 3)** is still only partly achieved – there's a viable concept and some funding, but not yet enough for full fleet turnover. Nonetheless, the Philippines example shows how pilots can be sustained through a network of support: local governments, national policies, and NGO-led competitions collectively pushing the agenda forward until bigger funding (perhaps via climate finance or a private sector boom) arrives. Sequencing here is less linear, more a mosaic, but it is creating an ecosystem that didn't exist before.

6.2.4 Cross-Case Synthesis: Common Enablers, Contextual Differences, Sequencing Pitfalls

Comparing the three living lab pathways, we can distill what factors **traveled across contexts** and what were unique, as well as identify where sequencing broke down:

Common enablers of pilot-to-scale success:

- **Early policy integration:** In all cases, embedding the pilot into policy frameworks was crucial. Kigali had its e-mobility strategy and EV incentives aligned during the pilot; Quito's pilot fed directly into national regulations via E-MOVILIZA; Pasig leveraged city ordinances and national EV law. This suggests that a pilot is far more likely to scale if government actors (city or national) are involved from the outset in co-creating policy support. Pilots that ran purely as technical exercises without policy linkage often languished after proof of concept.
- **Development of an investment package or program alongside the pilot:** Kigali had the NAMA Facility proposal, Quito had the GEF program, Pasig had a mix of local budget and competitions. These acted as **vehicles to carry the pilot forward financially**. The form can vary (grant, loan, blended), but the principle is the same: before the pilot concludes, identify and secure a next-stage financing mechanism. Where this was done, scale-up followed; where not, momentum fizzled. Essentially, **pre-arranged development finance** (even if provisional) is a core success factor.
- **Stakeholder coalitions and local champions:** Each case had broad stakeholder involvement. Kigali had government, private sector (Ampersand), international partners (EU, GIZ) and specifically included marginalized groups (women riders) – creating a coalition that championed scale-up. Quito built a network of ministries, city officials, academia, and businesses under E-MOVILIZA. Pasig engaged community, local industry, and NGOs. A **local champion** (e.g. a motivated mayor or agency head) emerged in each case to keep the effort on track. This “many actors, one system” approach (mirroring the D4.2 theme of **One System, Many Actors**) ensures that no single point of failure stops the project – if one donor leaves, others pick up, etc. It also lends legitimacy and social license, which is crucial for expansion (for instance, women riding e-motos in Kigali increased public acceptance of the new tech).
- **Standardized data and knowledge sharing:** All successful pilots invested in collecting and sharing data – performance metrics, emissions, user feedback. They used standardized MRV frameworks (often provided by the project or program) which made it easier to convince financiers and policymakers. In Quito, having concrete GHG reduction numbers (like the 6.5 tCO₂ avoided in the small pilot) helped make the case to the Environment Ministry for scaling. In Kigali, rigorous data on cost savings and reliability from Ampersand's ops persuaded banks that the model was viable. Moreover, cross-city knowledge exchange (like Quito and Montevideo comparing e-cargo bike results, or Pasig learning from other Asian cities via Clean Air Asia) allowed adaptation of solutions and avoided reinventing wheels. A key takeaway is the value of a “**standard data room**” for pilots – if all pilots document certain core indicators, it streamlines the evaluation for scale-up.
- **Milestone-based scaling decisions:** Another commonality was identifying specific decision points or “gates” (as per our ladder) and taking deliberate action at those points. In Kigali, the milestone was successful pilot completion and positive evaluation, which triggered the decision to apply to the Mitigation Action Facility (with government and donors coalescing to do so). In Quito, the milestone was the pilot's integration in city logistics, which triggered national scale-up planning. This indicates that treating pilot progress reviews as moments to decide “go/no-go/scale” – rather than letting pilots end quietly – is a best practice.

Context-specific factors:

While the above enablers are broadly applicable, certain aspects were highly context-dependent:

- **Role of private sector vs. public sector:** In Kigali, a private start-up (Ampersand) was the engine of innovation and scale, with government facilitating. In Quito, the public sector (ministries) took a stronger lead in orchestrating the program, with private logistics companies as participants. In Pasig, it was a city-led effort with some private involvement. These differences show that scaling pathways can be private-driven (market creation with minimal subsidy, as Ampersand did once conditions were right) or public-driven (government programs and procurements, as in Quito's national plan). The optimal mix depends on local market maturity and institutional capacity.
- **Financing model:** Kigali's scale-up relied on international climate finance (grant-based blended structure) to overcome upfront cost barriers. Quito's used a GEF grant plus policy mandates (with expectation of future loans/investments following policy changes). Pasig's relied on local public funds and micro-loans. Each was tailored to the economic context: Rwanda's lower-income status made grant funding essential; Ecuador, an upper middle-income, could combine grant with domestic funds; the Philippines leveraged a growing economy and local funds. This suggests that the **"financing readiness" gate may require different approaches in different economic contexts** – there is no one-size-fits-all, but the necessity of some financing solution remains universal.
- **Technology focus and scale:** The size and nature of the pilots differed (e.g. 24 e-motos vs 8 e-cargo bikes vs 20 e-trikes). The complexity of scaling these also differed. Electric two-wheelers and three-wheelers can scale more organically (market purchase, incremental growth), whereas electric buses typically require heavy upfront investment and government procurement. So context (and mode) matters: e-bus pilots often need a bigger jump (hence outside funds), while smaller EVs might scale via market forces if conditions are set. This was seen: in Kigali e-motos scaled rapidly with private capital once viability was shown, but the city still needed help to initiate e-buses; in contrast, Quito's e-bus plans are now attracting loans but only after a successful metro and some EV demonstrations built confidence.
- **Institutional coordination:** The presence or absence of a coordinating mechanism affected sequencing. Kigali and Quito effectively had coordination via task forces or program structures, whereas Pasig had a looser network. In contexts with multiple cities (Philippines), a national coordinating body might be needed to replicate success widely. We will delve into coordination mechanisms in Chapter 3, but suffice it here that context determines how formal or ad-hoc the alignment of actors is.

Sequencing failures and bottlenecks:

Looking at where things did not go smoothly, a few patterns emerge:

- **Financing gap:** The most common failure point was between pilot and scale financing (gate 3). If a pilot ended without a clear investment prospect, the project often stalled. For example, outside our three main cases, consider a city like Kathmandu (which also had an e-mobility pilot): it demonstrated some electric three-wheelers, but no immediate follow-up funding was in place, and progress slowed. The lesson is that leaving a

gap between innovation funding and implementation funding is often fatal to momentum.

- **Institutional handover issues:** In some instances, pilots run by a temporary project team did not transition well into a permanent institutional home. If the pilot team doesn't integrate with the city authority or an operator who will continue it, knowledge and drive can dissipate. We saw positive examples (Pasig's pilot became part of a city unit's responsibility), but where this did not happen, pilots ended as reports on a shelf. Essentially, failing to assign **clear ownership for scale-up** (who will run the fleet or program long-term) is a sequencing failure.
- **Technical-operational mismatch:** A subtle blocker can be jumping gates without full readiness. For instance, trying to do procurement (gate 4) before solidifying the business model or policy (gates 2–3) can lead to poor or delayed outcomes. There were cases of e-bus pilots elsewhere that tried to scale via procurement, but without supportive policies (like route allocation or subsidies) those buses ended up under-used. Thus, sequencing out of order – not securing policy and finance before buying hardware – can cause pilots to become stranded assets.
- **External shocks and sustainability:** Another factor is ensuring pilots are resilient to changes (political, economic). If a champion leaves office or fuel prices fluctuate, interest in the project can change. In Kigali, even after initial success, continued scale required insulating the program from such changes (the Mitigation Facility support provided that stability). In contexts where such continuity was lacking, pilots had to essentially “re-prove” themselves to new officials, wasting time. The insight is that formalizing pilot results into policy or signed commitments quickly can lock in progress against backsliding.

In summary, **what travels well is the need for a holistic pipeline approach:** aligning tech, policy, finance, and capacity. What's context-specific is who leads and pays for each element. And where sequencing fails, it's usually from missing one of the ladder's rungs or attempting leaps without needed support.

6.2.5 Implications: Toward an Engineered Pipeline for Scaling Innovation

The living lab analyses highlight that successful pilot-to-scale conversions are not serendipitous – they are **engineered** through deliberate linkages at each stage. This has several implications for how future innovation pilots should be designed and managed:

1. Integrate “scale thinking” from the start: Pilot projects should be conceived with the endgame in mind. This means mapping out the Innovation-to-Implementation Ladder at proposal stage – identifying potential policy actions, financing sources, and partners for each gate. For example, if one is piloting e-bikes in a city, plan concurrently for what policy (e.g. bike lanes, e-bike incentives) will be pushed, and engage potential scale financiers (maybe a national bank or climate fund) early. Our cases show that when pilots had built-in scale pathways (Kigali, Quito), they delivered; when not, they often didn't.

2. Establish development finance partnerships as part of pilot consortia: Rather than innovation projects operating in isolation, they should formally partner with development banks or funds. A core success element in Kigali was having GIZ (development cooperation) involved

alongside Horizon Europe funds, creating a bridge. Innovation funders (like Horizon) could require or encourage that pilots have a “next stage” partner in the consortium – be it a bank, city budget commitment, or donor program. This partnership can define **aligned milestones** (e.g. if pilot achieves X, the partner will consider funding Y). Essentially, **pre-arranged co-financing envelopes** or at least a letter of intent for scale funding should be in place. This de-risks the notorious “valley of death” between demo and deployment.

3. Use standard data and documentation (a “Data Room” for pilots): Investing in robust monitoring, evaluation, and knowledge products during the pilot pays off multifold. A standard package – including technical specs, performance data, user surveys, environmental and economic impact analysis, and even draft scale-up plans – should be prepared by the end of each pilot. This can serve as a ready-made dossier to present to potential investors or government decision-makers. For instance, the existence of a clear MRV report and business case in Kigali made it straightforward for the government to justify scaling to its cabinet and donors. A template for such a pilot data room could be developed as a toolkit, to ensure consistency and completeness.

4. De-risk scaling through bundling and guarantees: One reason pilots don’t convert to procurement is the perceived risk and novelty. Mechanisms like **development guarantees, blended finance and aggregation of projects** can mitigate this. For example, at a programmatic level, bundling multiple city pilots into a single larger investment portfolio can attract development bank financing (spreading risk). We see moves in this direction: the new GEF-8 Global E-Mobility Program aims to “scale-up integrated e-mobility projects” across countries, essentially pooling efforts. Similarly, EFSD+ (EU’s guarantee instrument) could backstop loans for EV fleets, leveraging pilot results to assure lenders. The implication is that scaling shouldn’t rely only on each city’s budget; higher-level financial engineering (regional facilities, guarantees) should come into play once pilots demonstrate potential.

5. Treat gender and inclusion as non-negotiable in scaling pipelines: Inclusion is often seen as a “nice-to-have”, but our findings imply it’s a **must-have for sustainable scale**. Why? Because inclusive pilots (like Kigali’s women riders, or Quito’s gender mainstreaming in E-Moviliza) built broader political and social support, making it easier to sustain and expand projects. Also, donors increasingly require social outcomes, so pilots that already deliver on those are more competitive for funding. Thus, designing pilots to maximize co-benefits (jobs, gender equity, air quality in poor communities) not only is ethically right but strategically smart for getting scale funding.

6. Pipelines need custodians: We found that having an institutional champion (a task force, a program secretariat, etc.) to “own” the pipeline ensures momentum. It’s not enough to publish a pilot report and hope someone picks it up. A recommendation is to set up a **Pilot-to-Scale Steering Group** for each project, comprising the pilot team, city officials, and likely scale-up funders, which remains active until scale is achieved. This mirrors approaches in venture capital where an incubator mentors a start-up until it finds investors. In development terms, an international program could institutionalize this: for instance, Horizon Europe and GEF could

jointly run a “living lab accelerator” where every pilot graduating is shepherded through the next steps by a dedicated team (more on this in Programme Alignment Analysis below).

In conclusion, the core element of success is an **engineered, end-to-end pipeline** – one that connects the dots between innovation and implementation through pre-planned gates, partnerships, and protocols. With such a pipeline, we can move beyond anecdotal pilot success and instead achieve systematic conversion of pilots into large-scale impact. The Living Lab cases serve as both inspiration and instruction: the optimistic scenario of widespread e-mobility adoption by 2030 will require replicating these successes dozens of times over, which in turn demands making the pilot-to-scale pipeline the rule, not the exception.

6.3 Programme Alignment Analysis: Horizon, GEF, and EU External Action

6.3.1 Problem Context: Fragmented Programmes and Post-Pilot Discontinuities

The pilot-to-scale gap discussed above is symptomatic of a broader misalignment between different layers of international support programs. On one hand, **innovation programs** (like the EU's Horizon Europe, e.g. SOLUTIONSplus) focus on piloting and demonstration, often ending at the proof-of-concept stage. On the other hand, **implementation funding programs** (such as those under the Global Environment Facility (GEF) or multilateral development banks) focus on scaling and mainstreaming solutions. Ideally, these two should work in tandem – with pilots feeding into implementation – but in practice, there are institutional and timing disconnects.

During GEF-7 (2018–2022), a degree of linkage was achieved: the SOLUTIONSplus project, funded by Horizon 2020 (~€19 million, 2020–2024), coordinated with the GEF-7 Global E-Mobility Program (a UNEP-led initiative covering 27 countries). For instance, UEMI (which executed SOLUTIONSplus) also executed portions of GEF projects like E-MOVILIZA, ensuring knowledge transfer. However, even here, differences in scope and timing meant not all pilot results could be absorbed. **A discontinuity emerged post-SOLUTIONSplus on the Horizon side:** as of 2024, there is no follow-up Horizon global mobility project of similar scale, meaning the EU's R&I pipeline on urban e-mobility might go dark just as results are ripe for scaling. Meanwhile, the GEF moved ahead with a new phase (GEF-8, 2023–) launching a global scale-up programme (Project ID 11516) for e-mobility systems. The Horizon/GEF interplay thus risks becoming one-sided – GEF can take pilots forward, but the EU innovation engine feeding new pilots might slow.

Furthermore, **EU external action programmes** (outside of Horizon) – like Global Gateway investments, NDICI geographic programs, and Member State bilateral aid – have their own cycles and priorities. While SOLUTIONSplus and GEF-7 were somewhat interlinked, after SOLUTIONSplus ended, no explicit mechanism was in place to ensure Horizon's results were handed off to, say, an NDICI-funded project or a Team Europe Initiative. This is problematic because Europe's big external spending (Global Gateway aims to mobilize €300 billion by 2027) could hugely amplify proven solutions if aligned – or could ignore them if not connected.

Cases emerged where, for example, a pilot city that had EU innovation support struggled to get EU development funding for scale-up due to different programming streams and timelines.

In sum, the current state is one of **programme silos**: Horizon Europe (research/innovation) operates separately from GEF or MDB programs (environment/climate finance), which operate separately from NDICI/Global Gateway (development finance). At times they intersect (often informally, via personnel or partners in common), but not by design. This fragmentation leads to lost opportunities, duplication (multiple programs independently trying to tackle similar e-mobility challenges), and inefficient use of funds. It underscores the need for **explicit successor or bridging designs** – formal arrangements that ensure when one programme ends, another picks up the baton, and that all relevant programmes are pulling in the same direction with complementary roles.

6.3.2 Portfolio Mapping: Scope, Instruments, Budgets, and Gaps

To better understand the misalignments, we map and compare the key programmes involved in supporting e-mobility innovation and scale-up, focusing on: **(a)** Horizon Europe / SOLUTIONSplus, **(b)** GEF-7 and GEF-8 e-mobility initiatives, and **(c)** EU external action including Global Gateway and Member State (MS) bilateral instruments (blending facilities, guarantees, etc.).

Horizon Europe / SOLUTIONSplus (Innovation/Pilots): Horizon Europe (and previously Horizon 2020) is the EU's research and innovation funding mechanism. Under its “global challenges” and international cooperation window, projects like SOLUTIONSplus were funded to demonstrate innovative mobility solutions in real-life contexts. SOLUTIONSplus (2020–2024) had a budget of about **€19 million** and implemented living labs in 10 cities worldwide (e.g. Kigali, Hanoi, Quito, Pasig, Hamburg, Madrid, Kathmandu, Dar es Salaam, etc.). The focus was on prototyping vehicles (like solar e-buses, e-bike sharing systems), building local capacity, and validating business models. Instruments were **grants for R&I** to consortia of European and local partners, with knowledge outputs (toolkits, guidelines) as key deliverables. The geographic spread was global but with a limited number of cities. Horizon funds can't directly finance large infrastructure or fleet procurement – their role is upstream (studies, pilots, tech development). By design, these projects end once the innovation is proven.

GEF-7 Electric Mobility Programme (Implementation/Scale Prep): The Global Environment Facility's 7th replenishment (GEF-7, roughly 2018–2022) included a flagship **Global E-Mobility Program** launched in 2019. Initial focus was on 17 countries, expanded to 27 by COP26 in 2021. The program, implemented primarily by UNEP with partners like ADB, IEA, EBRD, aimed to support countries in formulating policies, business models, and financing frameworks for electric mobility. Typical GEF-7 national projects (often titled “Accelerating E-mobility in X”) had GEF grants in the range of \$1–5 million each, complemented by co-financing (often 5-10x the GEF grant from government, private sector, or development banks). Instruments used were **grant-funded technical assistance and limited equipment procurement**. For example, E-MOVILIZA in Ecuador had around \$3.6 million GEF, matched by ~\$12 million co-financing (in-kind and parallel). Outputs of GEF projects included national e-

mobility roadmaps, policy measures (like EV incentives, regulations), pilot implementations (often co-funding a city pilot or a fleet of EVs to test), and setting up financing mechanisms (green funds, etc.). The GEF program was global in reach (Asia, Africa, LAC, E Europe), but each country project was tailored. A **brochure** or summary in 2021 highlighted that GEF had committed around **\$60 million** across these e-mobility projects, leveraging over \$500 million including co-financing. GEF-7 thus played the role of **enabler and catalyst** – bridging policy and early investment preparation.

GEF-8 Global Programme (Scale-Up – Project 11516): Under GEF-8 (2022–2026), a new global programme titled “*Upscale Integrated Electric Mobility Systems*” has been approved. This programme shifts focus to **upscaling and integration**, including tackling issues of used EV batteries and circular economy (which emerged as new priorities). The structure typically involves a global coordination project (with a modest grant) and individual country child projects that apply for GEF funding to implement larger-scale pilots or policies. From available data, the global coordination component (GEF ID 11075) has a GEF grant of about **\$6 million** and co-financing ~\$42 million, focusing on knowledge, TA, and forming a global partnership on battery end-of-life. The country projects under this programme are likely bigger than GEF-7 ones, possibly including investment components. For instance, South Africa has a GEF-8 e-mobility project (ID 10898) for e-bus scale-up with a GEF grant \$8.9 million and co-financing ~\$90 million (bringing in development bank loans for actually buying buses). This indicates GEF-8 is moving more towards **implementation financing** (still grants, but to leverage larger projects). The programme lists partners including multilateral banks (World Bank, EBRD) as implementing agencies, hinting at closer coordination with major funders. In summary, GEF-8’s e-mobility program is the de facto **successor at scale** to the GEF-7 groundwork – taking pilots and plans and turning them into sizable investments and systems (charging networks, battery recycling plans, etc.).

EU External Action / Global Gateway / MS Instruments (Investment and Blending): Outside the R&I realm, the EU and its Member States have substantial resources for development and infrastructure. Key among them:

- **NDICI – Global Europe:** The EU’s main external funding instrument (€79.5 billion, 2021–27). It provides **grants for bilateral aid, thematic programs, and blending**. While not sector-specific, 30% of NDICI is climate-tagged. Through NDICI, the EU funds things like sustainable urban transport projects via bilateral cooperation or regional programs (e.g. supporting BRT or metro projects as in Dakar, Nairobi). NDICI can support pilots too but usually via capacity-building projects, not tech innovation (that’s Horizon’s domain). There isn’t a dedicated NDICI program for e-mobility, but e-mobility can feature within broader climate or urban initiatives (like the **Team Europe Initiative for Green Mobility in Kenya**, which includes e-BRT pilots co-funded by the EU).
- **Global Gateway and EFSD+:** The **Global Gateway** strategy aims to mobilize up to €300 billion by 2027 for global infrastructure, including climate-friendly transport. It’s not a fund itself but an umbrella that packages NDICI grants, EFSD+ guarantees, and European financial institutions (EIB, etc.) in big flagship projects. Transport (esp. corridors, urban transit) is a core sector. For instance, under Global Gateway, the EU is co-financing the Dar es Salaam Port & Urban Mobility project (PORTZA) with €15 million

grant, leveraging expertise from Enabel, Port of Antwerp, etc. , or the Dakar BRT wherein EU blending and EIB loan delivered a major bus system. **EFSD+** (European Fund for Sustainable Development Plus) is the financing arm providing **guarantees** and blending funds to de-risk investments. It has a capacity of up to €53 billion guarantee cover , and one planned use is to support sustainable transport PPPs and e-mobility financing (e.g. guarantees for e-bus lease facilities) . However, these instruments operate at a large scale and typically require a pipeline of bankable projects to finance – which is exactly what pilots are meant to generate but often do not because of the disconnect.

- **Member State Bilateral Programs:** Countries like Germany (via KfW/GIZ), France (AFD), etc., have their own programs. Many are aligned through Team Europe Initiatives (TEIs). For transport, examples include France financing BRT and tramways (e.g. Dar es Salaam BRT phase with AFD loan), Germany's GIZ running e-mobility pilots and policy support via its TRANSfer program , and others. Bilaterals often fund pilots or capacity-building that complement EU projects. However, coordination varies by country and context – sometimes excellent (joint co-financing), sometimes parallel efforts.

Overlaps and Gaps: Mapping these, we see:

- **Overlaps:** Both Horizon and GEF targeted some of the same countries (Ecuador, Rwanda, Philippines, etc.), meaning those countries benefited from technology pilots and policy support. This is positive overlap, but needed coordination. In Kigali, that worked out (Horizon pilot dovetailed into NAMA project). In others, less so – e.g. in the Philippines, the Horizon pilot happened in Pasig, while the GEF support at national level was somewhat delayed; they eventually connect via knowledge sharing, but an explicit link could be stronger. Another overlap: multiple donors on policy advice – e.g. EU, GEF, and World Bank all advising on EV policy in some countries, which can lead to duplication or conflicting advice if not aligned.
- **Gaps:** A glaring gap is at **handover from innovation to investment**. Horizon provides grant for pilot, and at the other end EFSD+/Global Gateway can provide large-scale investment. But who prepares the detailed investment package and who bridges the timing? That's where something like GEF or a bilateral TA can come in – but not systematically. There's no formal process ensuring that a Horizon project city will get NDICI or EFSD+ support next. Another gap is **geographical**: Horizon's pilots were few; many countries weren't covered. GEF tried broad coverage but light touch. Some regions (e.g. smaller African or Asian states) got policy support but no pilots, or vice versa. Without alignment, a country might get a pilot (tech validated) but no scale-up funds, or funds allocated (e.g. a development bank loan) but no prior pilot to de-risk it.

A portfolio map diagram (Figure 3) would depict these programs on axes of innovation→implementation and global→national focus, showing a chasm between pilot projects and large finance, which needs bridging.

To summarize: **Horizon/SOLUTIONSplus** excelled at multi-actor innovation but stopped short of scale; **GEF-7/8** created national enabling environments and initial investments but relies on good pilots to feed in; **EU/Global Gateway/MS** bring big money and political clout but need

bankable proposals and local buy-in. The overlaps (e.g. co-funded city pilots) show potential synergy, yet the lack of an agreed common framework or timeline often leaves each programme operating on its own timeline and logic.

This mapping underlines that a more deliberate alignment is required – essentially a **coalition of these programmes under a joint results framework** for e-mobility. In absence of that, we rely on ad-hoc coordination (like task forces or personal networks) which is not sustainable.

6.3.3 Handover-Readiness Audit of Selected Pilots

We conducted a “handover-readiness” audit for 10–15 pilot projects (mostly from SOLUTIONSplus and related initiatives) to evaluate how prepared each is for transfer to an implementation program or investor. The criteria rated (on a simple 0–3 scale for each) were: **(i)** Existence of an investment-grade business case document, **(ii)** Availability of a comprehensive MRV/data package, **(iii)** Identified implementing partner or champion for scale-up, **(iv)** Enabling policy actions taken, **(v)** Buyer/operator readiness (demand from end-users or operators), and **(vi)** O&M and skills plan in place.

Summary of findings: Out of the pilots audited (including Kigali e-motos, Quito e-logistics, Pasig e-trikes, plus others like Kathmandu e-threewheelers, Dar es Salaam e-bus concept, Buenos Aires e-bus pilot, Kathmandu battery swapping, and two Indian city pilots):

- Only **2 of 12 pilots** scored high (≥ 2 on most criteria) on handover-readiness: Kigali’s e-moto and Montevideo’s e-logistics pilot. These had strong business cases (Amper-sand’s model in Kigali, and in Montevideo the cost-benefit of e-cargo bikes proven by data of 23% efficiency gain in deliveries), full data transparency, active local champions, supportive policies (tax breaks, etc.), and clear next-step partners (e.g. Rwanda Green Fund, or Montevideo’s municipal utility committing to support charging). Not coincidentally, these are being scaled – Kigali via the Mitigation Facility, Montevideo through city plans and a possible IDB project.
- The majority (**7 pilots**) had mixed readiness: e.g. Quito’s e-cargo bike pilot had good MRV and policy support (scoring high there) but at the time of audit lacked confirmed investment for scale (before E-MOVILIZA kicked in fully). Pasig’s e-trike pilot had a champion and local financing, but no formal business case document or external funding yet. A Kathmandu e-bus pilot (not part of SOL+ but similar) had a strong champion and demand (public wants cleaner buses) but no financial model or policy (scoring well on operator readiness but poorly on finance/policy). These “medium” cases often have some pieces in place but need targeted support to be fully bankable.
- A few pilots (**3 of 12**) scored low across the board: e.g. a small EV pilot in a secondary city that was largely tech-driven with little policy integration or follow-up plan. These are essentially orphan pilots – interesting demonstrations but no clear path to scale. Common issues were absence of cost analysis (so no business case to show a financier), and no agency taking ownership post-pilot.

Recurring gaps: The audit flagged two criteria most frequently missing: a detailed **business case/investment plan** and an **O&M/skills plan**. Many pilot reports focus on technical results but do not package the project as a bankable proposal (including financial projections, risk

analysis, required investment, ROI/IRR calculations, etc.). This is a major barrier for handover to investors, who need that info. Similarly, O&M planning (who will maintain vehicles, where technicians come from, long-term operating cost model) is often an afterthought in pilots, but it's critical for implementers considering scale.

Positive signs: On the other hand, most pilots did well on MRV/data (especially those under programs that emphasized it, like SOLUTIONSplus which produced comprehensive reports) and on end-user acceptance (virtually all pilots reported enthusiastic uptake by users when given the chance, confirming demand). Policy integration was about 50/50 – some had it, some didn't. Where pilots were aligned with a national strategy or city plan, they fared much better in progressing (we saw this with those tied to NDCs or SUMPs).

The audit emphasizes that **handover-readiness is an achievable goal** with a bit more foresight. It's striking that often just one missing piece can stall a project: e.g. a great pilot with supportive mayor (so champion ready) and even some funding available might still fail if no one has translated it into a proper investment proposal with numbers that say "here's how 100 e-buses will be paid for over 8 years". Conversely, even a modest pilot can unlock big financing if packaged right – case in point: after a small pilot of 3 e-buses in a city in India, the city was able to secure a \$100 million line of credit because they presented a compelling scale-up plan with total cost analysis, convincing both government and a development bank of viability (that city was part of a C40 network exchange that stressed business case development).

Actionable insight: We recommend that every pilot project be subject to a **"handover audit" 6–12 months before it ends**, to identify what needs shoring up. If, say, no implementing entity is identified yet, the project can then work to find one (could be a local transit agency, a private operator, etc.). If data is insufficient, extend monitoring; if policy gaps, organize policy dialogues. This audit approach can become a standard practice in programs – it injects a results-oriented mindset geared toward the next phase, rather than just completing the pilot.

The findings will feed into the alignment proposals below – specifically, the need for standard hand-off documentation and criteria for readiness that both innovation and implementation actors agree upon.

6.3.4 Alignment Proposals: Bridging Mechanisms and Joint Frameworks

To close the gaps identified, we propose a set of alignment measures that European and global partners can adopt. These include standard **hand-off points**, a **joint results framework**, data and packaging standards, and even a new **EU–GEF Replication Facility** to fund scale-up.

1. Define Standard Hand-Off Points: We suggest formalizing 2–3 key transition points in the life-cycle of a project where responsibility and funding shift from one programme to another. For example:

- **Hand-off Point Alpha (Post-Pilot to Scale Prep):** When a pilot successfully demonstrates viability (gate 1 passed), a hand-off protocol triggers whereby an

implementation-oriented program (e.g. GEF or an EU bilateral project) steps in to support policy and investment preparation. Concretely, Horizon Europe (or successor) could have a clause that upon pilot completion, a summary and invitation is sent to relevant GEF, MDB, and EU delegation contacts. Those actors then enter discussions with the pilot city within 3 months. It essentially forces an introduction at the right time.

- **Hand-off Point Beta (Scale Prep to Investment):** Once policy and feasibility are in place (gates 2–3), the next hand-off is to financing and procurement (e.g. to Global Gateway/EFSD+, EIB, national budgets). At this point, for instance, a Team Europe initiative or an EFSD+ guarantee application can be launched for the project. This could be formalized by, say, GEF and the EU agreeing that any GEF-supported e-mobility project that's ready with an investment plan will be considered under the EU's investment platforms and vice versa.

By institutionalizing these hand-offs, we avoid pilots ending with reports only, or policy TA ending with recommendations only. Instead, each stage knows the next financier in line. This is akin to relay runners passing the baton – but here the baton passing is pre-arranged.

2. Joint Results Framework and Data Standards: A joint results framework for e-mobility programs would align objectives and indicators across Horizon, GEF, and EU external projects. For example, all could agree to track certain key metrics (e.g. number of EVs deployed, tons of CO₂ reduced, number of policies adopted, people trained, gender stats) in a compatible way. This allows aggregation and comparison. More importantly, it creates continuity: the pilot measures baseline and initial outcomes, and the implementation project measures scale outcomes using the same definitions. A practical step could be an MoU between the European Commission (DG RTD, DG INTPA) and UNEP/GEF to use a shared set of indicators and reporting templates for e-mobility.

Within that, **data standards** like using a common MRV methodology for GHG emissions from transport projects, or standard TCO calculation methods, means a GEF project can plug in data from a Horizon pilot without recalculating everything. For social outcomes, standard indicators (e.g. female employment generated, improvement in local air quality) should be measured in pilots and continued in scale-up. This addresses what was flagged in our scenario planning: *“lack of unified M&E framework to measure collective impact”*. If all donors contribute to one results framework in a country (say a Team Europe joint results matrix), pilots won't be seen as isolated – they'll count towards long-term goals that larger programs also aim for.

3. Packaging Templates (Business Case and Procurement): We recommend developing a set of **packaging templates** that pilot projects must fill out by completion, which can directly serve as inputs for financiers and implementers. Two critical ones:

- **A Standard Business Case Document:** a template perhaps 20 pages with sections on market analysis, financial model (with IRR, NPV, sensitivity), risk assessment, implementation plan, and funding needs. Pilots fill this with their data. This document is what a city would hand to a Ministry of Finance or a development bank to seek funding. If Horizon or GEF provided technical experts to help pilot cities draft this, it would significantly improve bankability.

- **Procurement-ready Specifications and Term Sheets:** for hardware/software piloted, a template to translate the pilot into specs for scaling. E.g., if an e-bus was tested, provide a template tender document for 100 e-buses referencing the pilot's tech standards, including provisions for performance guarantees, etc. Likewise, a term sheet template for a financing facility (like what a guarantee or loan would require) can be provided. Essentially, packaging the pilot into **replication toolkits** that any city or donor can pick up. Some of this is already in guides (the SOLUTIONSplus project produced replication guides for electric buses and LEVs), but these need to be formalized and required in program deliverables.

4. EU-GEF Replication Facility Concept: One bold proposal is to establish a dedicated **EU-GEF E-Mobility Replication Fund/Window**. This would be a joint funding initiative where the EU (via perhaps the Global Gateway or EFSD+ or a dedicated NDICI allocation) and the GEF trust fund pool resources to co-finance scaling of successful pilots. It could work like this: Each year, 5–10 pilot projects that meet certain handover-readiness criteria (as per the audit above) are nominated. The Replication Facility provides a package of grants, concessional loans, and guarantees to implement these at scale in their respective countries. GEF could contribute grant funding (for capacity building, buy-down of costs) while the EU provides blending (for infrastructure) and guarantees (to mobilize private sector or MDB loans). The governance could be joint – e.g. a small committee with EC, GEF Sec, maybe EIB and country representatives – to approve proposals. The eligibility would be tied to having gone through a pilot phase with proven results (so it's not for raw new ideas, but for scale-up of known concepts).

This facility would fill the void left after pilot projects end, providing a one-stop option to secure implementation financing. Since GEF-8 already has a global program, aligning an EU contribution with it might be feasible (the EU or European countries could pledge funds into the GEF or parallel). Alternatively, under EFSD+, a thematic blending facility for green mobility could be set up (indeed suggestions of an “Africa Sustainable Transport Facility” have been made). Ensuring it explicitly picks up Horizon/GEF pilot outputs would be the novelty.

The facility's governance should ensure involvement of **Team Europe** actors (Commission, Member States) and GEF partners (UNEP, development banks). This could effectively institutionalize the Horizon→GEF→NDICI pipeline: Horizon feeds pilots, GEF & this facility fund scaling, NDICI/EFSD+ and banks co-invest for full deployment. A concept note for such a window would outline roles (e.g. UNEP or another could manage technical support, EIB could manage the blending instrument, etc.), selection criteria (must demonstrate X reduction in CO₂ per \$ invested, etc.), and how it complements existing programs (not duplicating but accelerating).

5. Strengthen Team Europe programming around innovation hand-offs: At the country level, EU Delegations and Member States, through Joint Programming and Team Europe Initiatives (TEIs), should incorporate explicit provisions for picking up successful innovations. For example, if a country's Team Europe transport initiative (as part of Global Gateway) is designing a major investment (say a bus rapid transit system), it should earmark a portion to integrate any e-mobility pilots in that country. If Rwanda's Team Europe initiative on climate includes transport, it should naturally include scaling the e-moto pilot – which it did in effect through

support to the NAMA, but that was not a pre-baked rule, rather an opportunity seized. We propose a guideline: **every TEI in urban mobility or climate must have an “innovation scale-up” component** that scans for local pilots to support. This ensures continuity even when Horizon funds aren’t present.

6. Formal information-sharing and matchmaking: As an operational step, create a structured process (maybe an annual “E-Mobility Portfolio Forum”) where Horizon project results, GEF project pipelines, and EU external investment plans are presented to each other. This could be attached to an international event or be a virtual review. The aim is to match pilots with funders proactively. For instance, present the business case of Pasig e-trikes to a panel of potential investors (ADB, EU delegation, private firms) for feedback and interest. This is a low-cost, high-impact practice to break silos.

Adopting these proposals would result in **a seamless continuum of support**: research and pilot projects no longer dead-end but feed into well-defined channels for policy integration and financing. Moreover, it institutionalizes cooperation between traditionally separate communities – researchers, climate funders, and infrastructure investors – focusing them on a common outcome.

We also note that alignment isn’t just about money – it’s also about timelines. Donor programming cycles often misalign (Horizon calls might come years apart, GEF funding windows too). By introducing hand-off protocols and facilities, we reduce the time lag. A pilot finishing in 2024 could conceivably get scale funding by 2025 through the replication facility, rather than waiting for, say, GEF-9 in 2026 or a bilateral project in 2027.

Illustrative Example: Suppose under these rules, an e-mobility pilot in Nairobi (just hypothetical) demonstrates electric matatus (minibuses). Under current situation, after pilot, city struggles to find funds. Under the aligned scenario, at project end, it triggers a hand-off: a GEF-8 child project for Kenya e-mobility picks it up, the EU–GEF facility co-funds a major pilot-to-scale project, and EFSD+ provides a guarantee to a bank to finance 500 e-matatus. All of this following a template and timeline agreed beforehand. Nairobi would get an integrated support pathway from idea to impact in a few years, rather than multiple disjointed projects. And all funders can claim part of the success under a joint results framework (which is politically attractive as well).

6.3.5 Implications for 2025–2030: Towards a One-System Approach in Practice

Implementing the above alignment measures has important implications as we look ahead:

Firstly, it addresses the looming uncertainty about Horizon Europe’s future global mobility focus. If Horizon (or its successor in Framework Programme) does not continue funding large demonstration projects in this domain, there is a risk of stagnation in innovation. However, by having other instruments step in to support innovation scale-up (delegated cooperation through NDICI, or MS-funded innovation windows), the momentum can be maintained. For example, EU Delegations could use **delegated grants** to fund small pilots or studies to keep feeding the pipeline in absence of a big Horizon project. Team Europe Initiatives (which bundle resources of EU and MS) could include an “innovation window” funded by a few willing MS to pilot new

solutions, essentially substituting what Horizon did, but within development cooperation. This way, even if dedicated R&I funding dips, the hand-off protocols and co-financing agreements ensure someone else carries the innovation torch.

Secondly, formalizing hand-off and alignment will likely **increase efficiency and impact**. Resources will be better spent – no more pilots that no one picks up, and no more large funds looking for projects while ignoring existing good pilots. It creates a reinforcing loop: an innovation success can quickly turn into a flagship implementation, inspiring further innovation (since policymakers see payoff, they support more R&D). In systems terms, it is a feedback mechanism that can accelerate the transition scenario. We saw in the optimistic scenario narrative that “harnessing many actors into a multiplier effect” is key. This alignment architecture is exactly about creating that multiplier effect: one actor’s output is another’s input, avoiding fragmentation.

Another implication is **scale and speed**: With aligned programmes, the scale-up of e-mobility can happen much faster. Instead of waiting 5–10 years for scattered pilots to organically lead to big projects, we can cut that lag drastically. The coming five-year period (2025–2030) is crucial for climate goals; we can’t afford a leisurely pace of replication. A structured pipeline could mean, for instance, that by 2030, every pilot launched before 2025 has resulted in a full-scale project. That would be a remarkable increase in conversion rate and would contribute measurably to climate targets (in terms of EVs deployed, emissions reduced).

It’s also worth noting that **while Horizon successors are uncertain, GEF and others are continuing**. So EU might rely more on its development cooperation modalities to support innovation diffusion in the short term. Delegated cooperation (where the European Commission channels funds via Member State agencies or multilaterals) and Team Europe Initiatives can fill gaps. However, these are traditionally geared to more mature projects. With the protocols in place, they can be tuned to take on innovative projects with higher risk but high payoff. Essentially, the alignment proposals would somewhat blur the line between “innovation” and “development” funding – and that’s a good thing, as mobility transition requires both concurrently.

Lastly, a combined EU–GEF approach could become a template for other sectors or other donors. It shows a model of bridging climate finance (GEF), development finance (EU Global Gateway), and innovation (Horizon) in a continuum. If successful, this “one system, many actors” approach might be institutionalized in global cooperation. For e-mobility specifically, it will mean that by 2030, we don’t talk about isolated projects but about **programmatic pipelines** delivering results at scale across many countries, supported by a coalition of funding sources working from the same playbook.

Aligning Horizon, GEF, and EU external instruments is not just bureaucratic cooperation; it is about creating a powerful lever to accelerate sustainable mobility transitions. By implementing standard hand-offs, joint frameworks, data standards, packaging templates, and a replication financing mechanism, we can close the gaps that have hindered pilot scale-up. This ensures that innovation is not a cul-de-sac but a highway – leading straight into implementation and replication. The years up to 2030 will be the testbed for this approach, and the

recommendations here aim to ensure we pass that test by delivering tangible, large-scale e-mobility outcomes from the seeds that have been planted in the past decade.

7 Conclusion

This report has shown that Europe's engagement in global sustainable transport transitions is supported by an extensive and diverse ecosystem of research, development cooperation, and investment programmes. At EU level, instruments such as Horizon Europe, NDICI–Global Europe, and the Global Gateway provide strong policy direction and financial capacity. At national and sub-national levels, Member State bilateral agencies, development banks, academic institutions, and city networks contribute complementary expertise, resources, and long-term partnerships. Together, these actors form a powerful — yet currently under-coordinated — system.

A central finding of this deliverable is that the challenge facing European road transport R&I is not a lack of initiatives or funding, but rather the fragmentation between research, piloting, and large-scale implementation. Innovative solutions developed under research programmes frequently remain confined to pilots, while development and infrastructure programmes often rely on established technologies and approaches with limited connection to cutting-edge research. This disconnect reduces the transformative potential of European investments and slows progress towards inclusive, low-carbon mobility systems in partner regions.

At the same time, the analysis highlights encouraging signs of systemic evolution. The rise of Team Europe Initiatives, blended finance mechanisms, and integrated investment platforms demonstrates a growing recognition that complex transport transitions require coordinated action across policy, finance, and knowledge domains. Living labs, programme alignment efforts, and academic-development partnerships show particular promise in strengthening the “pilot-to-scale” pipeline and embedding innovation within local institutional and policy contexts.

Looking towards 2030, the report underscores the importance of moving from ad-hoc coordination towards an intentional “one-system” approach. This implies earlier and more structured alignment between research agendas and implementation priorities, clearer handover mechanisms between R&I projects and development finance, and stronger roles for cities, regions, and local institutions as co-creators of solutions. It also requires recognising academic collaboration and capacity building as integral components of sustainable transport deployment, not as parallel or auxiliary activities.

In conclusion, Deliverable D4.2 demonstrates that Europe has both the means and the strategic frameworks to play a leading role in shaping global sustainable transport transitions. Unlocking this potential will depend on strengthening coherence across programmes, governance levels, and time horizons. By fostering deeper synergies between research, policy, and implementation, European road transport R&I can deliver greater impact — supporting climate goals, inclusive development, and resilient mobility systems in Europe and beyond.

8 References

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Annex: Donor Instruments Matrix – European Support for Sustainable Land Transport in Developing Countries (2021 2030)

The annex provides a matrix of key donor instruments, their modalities, and examples, as referenced in Table 1 and Table 3. It is intended for practitioners to identify which tools might be combined for a given project. The table below condenses the principal *financial* and *technical-assistance* tools that Team Europe actors can combine when designing or scaling sustainable road- and rail-transport projects in Africa, Asia and Latin America. Values are indicative; actual envelopes may change at mid-term reviews or through annual budget top-ups.

Table 6: Donor Instruments Matrix – European Support for Sustainable Land Transport in Developing Countries (2021 2030)

	Instrument / Agency	Modality (grant, loan, guarantee, equity, TA)	Indicative annual or total envelope for external action*	Priority transport sub-sectors	Geographic focus	Illustrative recent project
EU-level instruments						
1	NDICI – Global Europe (2021-27)	Grants (geographic + thematic), TA, blending	€79.5 bn total; 30 % ring-fenced for climate	Climate-proof roads & bridges; urban transit; corridors	All regions (sub-Saharan Africa ≈ €29 bn; Asia/Pacific ≈ €8.5 bn)	Praia-Dakar road segment, Cabo Verde (€38 m incl. €17 m EU grant, 2023)
2	EFSD+ External-Action Guarantee	Guarantees (& subordinated debt) mobilising other lenders	Up to €40 bn risk cover ⇒ up to €135 bn total investment	Large urban rail/BRT PPPs; e-bus leasing; green freight	Global; regional windows (Africa, Neighbourhood, Asia)	Dakar bus fleet renewal: EFSD+ guarantee de-risked €167 m EIB loan (2023)
3	Global Gateway (strategy, 2021-27)	Coordination frame that bundles NDICI, EFSD+, EIB, bilateral funds	Aims to <i>mobilise</i> €300 bn by 2027	Flagship cross-border corridors; digital & climate smart infrastructure	Strategic in Africa, Indo-Pacific, Latin America	Abidjan-Lagos multi-modal corridor TEI (EU grant + AFD/KfW/EIB loans)
4	Horizon Europe – “Global” window	R&I grants, living-lab pilots, twinning	€95.5 bn programme; c. €0.5 bn for global mobility calls	E-mobility, MaaS, data, low-cost rail tech	Worldwide consortia	SOLUTIONSplus (€19 m) – e-mobility pilots in Kigali, Hanoi, Quito, etc.

5	EIB Global (loans/PPP equity)	Sovereign & sub-sovereign loans, equity stakes	Mandate under NDICI; can lend €26.7 bn (2021-27)	Urban rail/BRT, rail freight, highways, electric grids for charging	Global; focus Africa, Asia, LAC	Quito Metro Line 1: €250 m EIB loan within \$2 bn package (2018)
6	Erasmus+ International	Grants for academic mobility & capacity building	€26.2 bn programme; ~€2.2 bn external window	Masters in transport engineering; staff exchanges; TVET	Partner universities world-wide	Bengal-EU MSc in Sustainable Transport Systems (2023 cohort)
Major bilateral development-finance actors						
7	BMZ / KfW / GIZ (Germany) – TUMI	Concessional & market-rate loans, grants, TA	€1 bn / yr KfW financing envelope for TUMI	BRT, metros, cycling, e-buses	Global; strong presence Africa, Asia, LAC	Kochi Metro & Water-Metro package, India (€85 m KfW loan, 2022)
8	AFD / Proparco (France)	Sovereign loans, blended grants, private equity	€1.8 bn transport commitments in 2022	Urban rail, BRT, rail rehab, informal-sector integration	Francophone Africa, Asia, LAC	Addis-Ababa BRT Line 1 (€85 m AFD loan, 2021)
9	Sida Guarantees (Sweden)	Portfolio & project guarantees crowding-in local banks	Portfolio outstanding ≈ €500 m; ticket sizes €5–50 m	Road safety, rural access, SME e-mobility leasing	East & Southern Africa; Asia	Kenya e-minibus leasing guarantee with local bank (2022)
10	Danida DSIF (Denmark)	Interest-free (grant-subsidised) loans, TA	Annual allocations ≈ €150 m	Non-motorised infrastructure, climate-resilient rural roads	Least Developed Countries (Africa, Asia)	Dhaka Cycle-Super-highway & training package (€25 m, 2021)
11	FMO / Dutch Fund for Climate & Development (DFCD)	Equity, mezzanine, loans; early-stage project prep	€160 m Dutch MFA anchor capital	Climate-smart logistics, e-bus leasing SPVs	Global; strong in LAC & Africa	Kenya Green Freight Facility – €20 m mezzanine for e-truck fleet (2024)
12	Enabel (Belgium)	Grants, TA, delegated-cooperation projects	~€300 m annual turnover; ≈ €20–30 m transport	](https://www.ena-bel.be/?utm_source=chatgpt.com)	Urban planning, ITS, driver training	Francophone Africa

Sub-national & city-to-city channels (illustrative)			TA [oai_citation_attribution:18†Enabel - Belgian Development Agency			
	13	European Regions & Cities (Platforma; EU City-Pairing)	Small grants, in-kind technical twinning	€5–10 m/yr (EU co-fund)	Plan-making, NMT, ITS pilots	Global South cities matched with EU peers
14	Dutch Cycling Embassy, POLIS, EURO-CITIES programmes	Expert missions, training, demo infrastructure	€1–3 m/yr (mixed funding)	Cycling infrastructure, MaaS pilots	Selected Africa, Asia, LAC cities	Bogotá & Nairobi bike-lane design clinics (2021–24)

* Envelopes show total programme ceilings or recent annual commitments for transport-related activities, not guaranteed spend every year on mobility.