

Industry Agenda

# Africa Strategic Infrastructure Initiative Project Overview: Accelerating Infrastructure Development in Africa

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# 1. Initiative Background and Overview

Development of infrastructure is one of the top political priorities in Africa, to enable economic growth and competitiveness. Africa runs the risk of sacrificing about 2% of gross domestic product (GDP) growth per annum, without adequate infrastructure endowment. For this reason, and for the first time in its history, the continent established a commonly accepted plan for its infrastructure priorities, the Programme for Infrastructure Development in Africa (PIDA). PIDA has been jointly developed by the African Union Commission (AUC), the New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency (NEPAD Agency), and the African Development Bank (AfDB). A subset of 51 programmes constitutes the PIDA PAP (Priority Action Plan), which includes energy, transportation, water and information and communications infrastructure programmes selected on the basis of their expected overall economic impact, affordability and potential for regional integration. The total cost of delivery of these programmes, from 2012 to 2020, is expected to be nearly \$75 billion.

To achieve the ambitious objectives set out in PIDA, collaboration with the private sector is crucial. Hence, to integrate private sector input regarding the direction and acceleration of these infrastructure mega programmes, international and African business leaders initiated the African Strategic Infrastructure Initiative at the World Economic Forum on Africa in Addis Ababa, in May 2012. The Initiative is led by the World Economic Forum in partnership with the African Development Bank, and is supported and guided by the African Union Commission and the NEPAD Agency, the overall coordinating agencies for the implementation of the PIDA PAP. The Initiative aims to:

- Help the public sector benefit from objective, transparent and informed input from the private sector

to prioritize and systematically select projects for acceleration from PIDA, including a pilot project

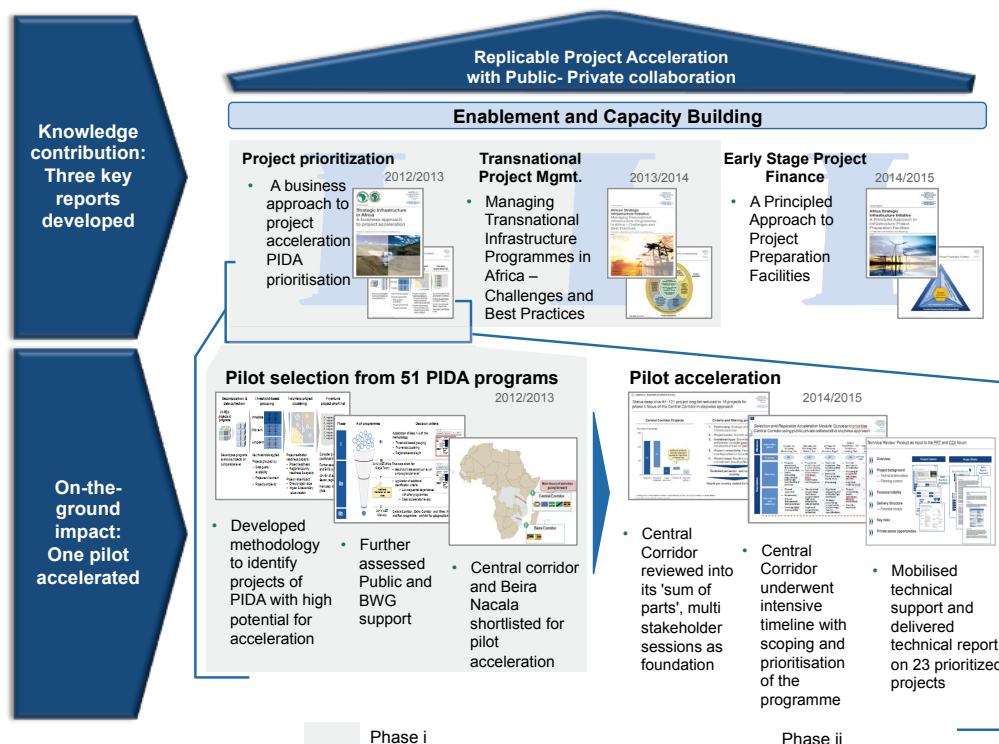
- Develop innovative ideas and informative publications on project acceleration (including enablement and capacity building), transnational infrastructure programme management and early stage project financing to improve infrastructure delivery in Africa. Ultimately, it will provide a model to be replicated across Africa, creating an enabling environment for private sector involvement in infrastructure development, with a core focus on accelerating the implementation of PIDA PAP.

To ensure a coordinated business voice to prioritize and accelerate the PIDA programmes, a Business Working Group (BWG) for the Initiative was established. Currently the BWG consists of more than 40 public institutions and private companies (see the appendix for BWG members as of May 2015).

The BWG was recognized and endorsed at the 20th Assembly of the African Union Heads of State in January 2013. It draws on the World Economic Forum's Partners in the Infrastructure & Urban Development industries, on multilateral and regional development banks, and other relevant industry sector experts. The BWG holds regular meetings to guide the Initiative and enable the public sector to benefit from objective, transparent and informed input from the private sector; the most recent meeting was held on the 9th of March at the Industrial Development Corporation of South Africa. The Development Bank of Southern Africa (DBSA) and General Electric (GE) acted as co-chairs to the Initiative, and The Boston Consulting Group served as the project adviser.<sup>1</sup>

The Initiative has been structured into two phases, with the first focusing on "Project Prioritization and Pilot Selection"; the second focuses on "Pilot Project Acceleration" (Figure 1).

Figure 1: Initiative Phases and Topic Overview

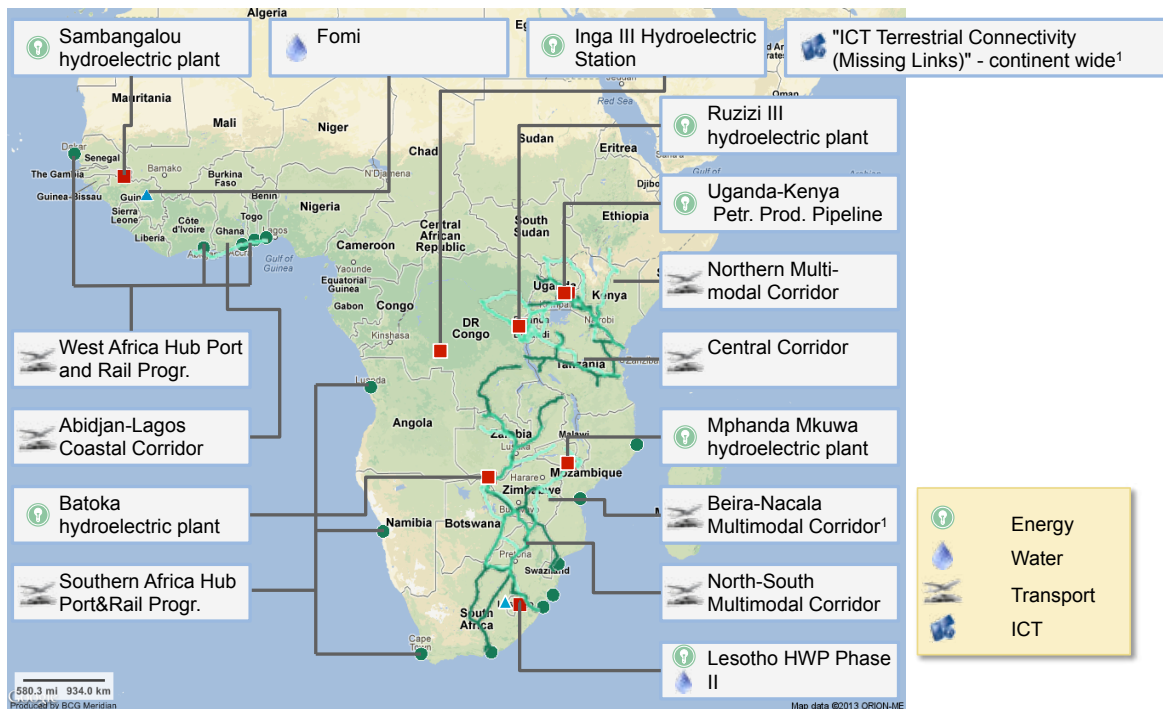


Phase i focused on groundwork fostering strong relationships between the public and private sectors to ensure the future success of the Initiative. Key outcomes of phase I included the formation of the BWG, and two knowledge reports: *Strategic Infrastructure in Africa – A business approach to project acceleration* and *Managing Transnational Infrastructure Programmes in Africa – Challenges and Best Practice*.

The Forum report, *Strategic Infrastructure in Africa – A business approach to project acceleration*, presents

the infrastructure project prioritization and selection methodology developed in detail, and explains the different economic, technical, social and regional criteria that were applied to identify the PIDA projects with potential for acceleration.<sup>2</sup> Based upon this methodology, the 51 PIDA programmes were evaluated, with 16 programmes shortlisted for potential acceleration. Refer figure 2 for an overview of the 16 **PIDA Priority Action Programmes**.

Figure 2: Overview of PIDA PAP



Source: World Economic Forum

Initially three programmes from the 16 were discussed: the West Africa port and hub programme, Beira Nacala Corridor and Central Corridor. Heads of state and business representatives agreed to accelerate the Central Corridor as the pilot project, due to its significant potential for Africa to unlock landlocked countries and support secondary markets, and as it benefitted from strong political support.

Phase ii, focused on pilot acceleration, was initiated in June 2014. The Central Corridor served as the pilot, with an integrated multimodal transport programme across five countries, Tanzania, Burundi, Rwanda, Uganda and the Democratic Republic of Congo (DRC), and an investment need of approximately \$18 billion. Impeding its progress are issues such as lack of quality data, little stakeholder cooperation, insufficient programme planning and structuring. But due to the convening power of the Forum and its Partners AfDB, NEPAD and AUC, as well as private sector input on various programme design issues, significant progress has been achieved. As an example, the Initiative has – with local agencies like the Central Corridor Transit Transport Facilitation Agency (CC-TTFA), ministerial representatives and institutions (Roads Agency Holding Company (Tanzania), Tanzania Ports Authority, Uganda

Investment Authority, etc.) – collaboratively developed a plan to gather omitted project data, standardized project fiches and consolidated more than 121 sub-projects within the Central Corridor countries and sectors. Based on a stringent methodology using criteria such as strategic importance, corridor linkage and value proposition, 23 sub-projects were identified as cornerstone stage 1 projects. A series of working sessions were held in Dar es Salaam, Midrand and Kigali to ensure that local, international, private and public sector inputs were incorporated into the process. Among others, input was sought on the typical project finance requirements for rail projects, the harmonization of technical requirements (such as rail gauge selection), and procurement transparency requirements.

As a result, key outcomes of phase II include a consolidated data book of the 121 sub-projects; a staged road map for the implementation of the corridor projects; 23 shortlisted projects for immediate consideration as cornerstones of the corridor; and the idea to develop a value (rather than an extraction) corridor. Additional outcomes include enhanced investor confidence; increased marketing and visibility of the corridor potential and its projects; improved public sector understanding of private finance requirements; enabled

agencies through hands-on training and capacity building; and overall stronger public-private relationships. The Initiative has also facilitated the mobilization of much needed technical resources, sponsored by the DBSA, to complete required project packaging exercises of the stage 1 projects in preparation for their showcasing and market sounding during a presidential roundtable and Investors' Forum in March 2015 in Dar es Salaam.

Apart from project prioritization and acceleration efforts, the Initiative continued to develop innovative ideas and informative publications that contribute to an enabling environment for African infrastructure delivery. A report 'A Principled Approach to Project Preparation' launched in June 2015 aims to enhance private sectors' participation in the early stages of projects.

As the Initiative has reached its final phase at the World Economic Forum, it will transition to the NEPAD Agency, for replication of the project acceleration process and continued acceleration of PIDA. Initial considerations on the transition plan and required resources for the NEPAD ASI secretariat are continuing with AfDB, AUC, DBSA and NEPAD.

The following sections provide a brief yet comprehensive summary of the various activities and knowledge tools created since the Initiative's inception in 2012, for ease of reference (see the appendix and Forum website for details).

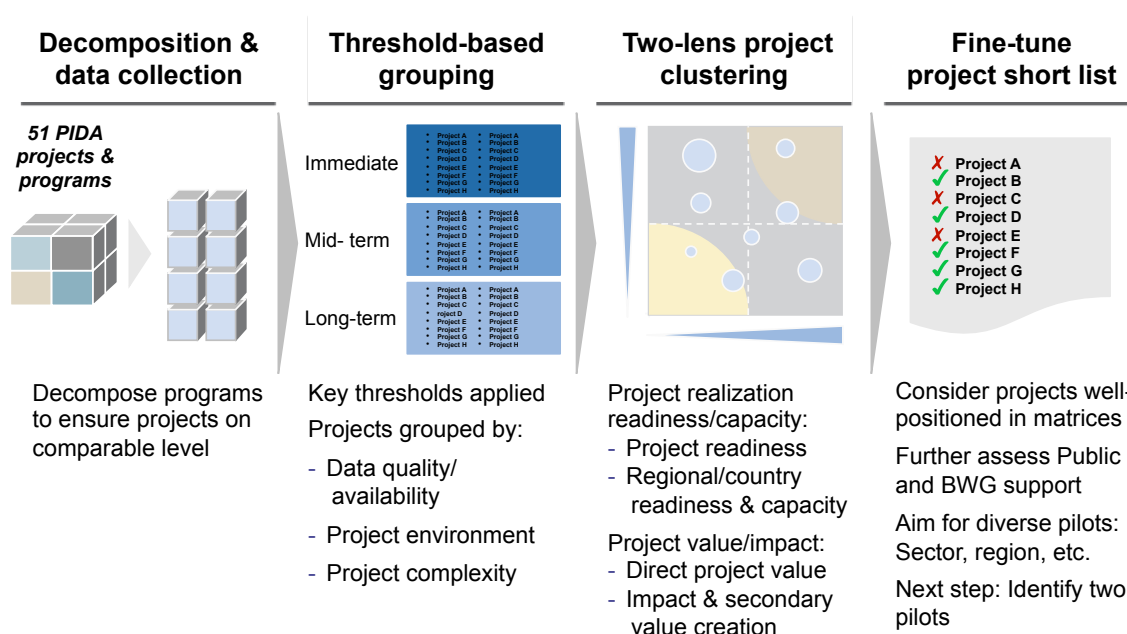
## 2. Project Prioritization and Pilot Selection

The magnitude of the PIDA programme is significant as it constitutes 51 mega programmes across the continent and across sectors, with an estimated investment need approximated at \$75 billion (an overview of the PIDA programmes per sector can be found within the appendix). Unfortunately, not every proposed infrastructure programme is equally valuable or doable. Given that resources of time, labour and capital are limited, decision-makers must give priority to programmes that yield the highest economic and social benefits in an effective and efficient way. However, identifying and prioritizing a programme for acceleration requires analysing a large number of diverse projects across various dimensions - a difficult and time-consuming task involving rigorous methodology. Therefore, the Forum report (created in partnership with the BWG) on *Strategic Infrastructure in Africa – A business approach to project acceleration* introduces such a detailed, quantitative-based methodology.

The methodology proposed includes a set of analytic tools to be used sequentially in four basic steps:

1. Unbundling complex programmes into discrete individual projects to facilitate direct comparison (as comparisons between broadly labelled programmes can be difficult and misleading)
2. Grouping projects for immediate, mid- or long-term acceleration focus given three key thresholds including data quality/availability, project environment, project complexity
3. Identifying pilot candidates for immediate acceleration based on a "two-way clustering" along project realization readiness and project value/impact
4. Fine-tuning the produced shortlist by rating projects on other key considerations such as regional and sector diversity and government support

Figure 3: Four-Step Methodology to Unbundle and Prioritize the 51 PIDA Programmes



Source: World Economic Forum

These steps act as a series of refining screens to prioritize and then select projects for possible acceleration, designed to reduce the complexity of the selection process by making key project factors easily visible. While these tools provide a disciplined structure for analysis, the criteria employed can be calibrated to meet the specific requirements of various individual project stakeholders (and are applicable to other regions with certain adaptations).

The PIDA project list, with data sourced from AUC, NEPAD and Aurecon Engineering Consultants, served as input to apply the above methodology. For this purpose an Excel-based project assessment tool was developed that provides a flexible way to implement the methodology. Based on the data and tool, 16 programmes were initially shortlisted and presented to stakeholders at the World Economic Forum on Africa in May 2013 in Cape Town. To further refine the shortlist, an additional private sector survey was conducted. This survey used several additional criteria, such as low sequential dependence with other programmes, the availability of acceleration levers, private sector interest and limited number of “showstoppers”. This resulted in a shortlist of seven PIDA programmes.<sup>3</sup>

During the World Economic Forum Annual Meeting 2014 in Davos-Klosters, heads of state and business leaders considered the seven shortlisted projects. The Central Corridor was selected as a pilot for immediate acceleration, since it holds significant regional importance and would unlock multiple landlocked countries with readiness and willingness of stakeholders, while supporting the development of secondary industries such as fisheries, cotton and coffee.<sup>4</sup> The next section describes the activities completed since selection of the pilot.



## 3. Pilot Project Acceleration

Since the selection of the Central Corridor as the pilot project in May 2014, the Initiative has focused on accelerating progress by leveraging the Business Working Group (BWG) through dialogue-based sessions, collaboratively developing a replicable process for other infrastructure programmes in Africa.<sup>5</sup> The Central Corridor is considered a complex programme, yet significant progress has been achieved in partnership with the CC-TTFA, AUC, NEPAD and AfDB in limited time.<sup>6</sup> This section describes the activities undertaken within a short timeline, the impact delivered and lessons learned.

### 3.1 The Acceleration Process

Key recommendations from the BWG over the period have guided the process, providing critical input and supporting the progress systematically. These recommendations have included, among others, the need to:

- Establish an overall Programme Management Unit for the implementation of the Central Corridor
- Establish a clear structure for the Central Corridor project hierarchy with a distinct definition of projects (i.e. clarity on project granular level)
- Ensure projects are developed in a staged approach, by selecting cornerstone projects from the long list to be considered during stage 1 of the Central Corridor's development
- Bundle projects into viable packages, with appropriate legal and governance structures for each
- Investigate the viability of certain technical specifications (such as standard and metre gauge railways, toll roads, and so on)
- Consolidate project information and make non-confidential information available to all stakeholders
- Complete the preparation of project packages, determining the procurement model for each package and prioritizing their implementation
- Appoint a technical expert within the CC-TTFA to drive and oversee selected stage 1 projects during preparation and packaging towards implementation, while enabling the institutions involved
- Address open legal and regulatory issues and establish standard procedures for implementation
- Host a public Investors Forum to showcase selected cornerstone projects for participation by the private sector
- Market the successes achieved to build credibility and confidence in partners

Given these recommendations, and in partnership with the CC-TTFA, the World Economic Forum has led and facilitated multiple planning and working sessions in Dar es Salaam, Midrand, Sandton and Kigali since May 2014 which have achieved the majority of the recommendations provided at the beginning of the process. Legal and regulatory issues remain complex and too large in scope for the acceleration to try and resolve, (see figure 4 for an overview of the intensive nine-month timeline with activities).

Figure 4: Calendar of Acceleration for the Central Corridor (Guidance for replication)

Activity	2014					2015						
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
<b>Central Corridor Scoping workshop (Dar - 3 Jun 2014)</b> — Proposed governance structure of the CC acceleration process — Defined the resourcing requirements for the process and high level timeline	▲											
<b>Central Corridor Working Session (Dar - 1 &amp; 2 Jul 2014)</b> — Defined project and programme scoping criteria & high level fiches — Identified 121 projects that constitute the corridor with reporting tool — Agreed on phased approach, i.e. shortlist cornerstone projects		▲										
<b>Project finance in Africa: A commercial perspective on rail (JHB, 19 Aug 2014)</b> — Open dialogue with banks financing infrastructure in Africa to share expectations, lessons learnt, innovative instruments and requirements			▲									
<b>Central Corridor Planning Workshop (Kigali , 21 Aug 2014)</b> — Technical alignment - Five country political alignment on tech requirements — Defined the Central Corridor equity story — 27 projects selected from 121 longlist, 18 further shortlisted by taskforce			▲									
<b>Business Working Group input (JHB – 30 October) 2014</b> — Present progress and gage private expert input to process — Identify additional work required and resource requirement					▲							
<b>Technical Taskforce meeting (Dar, 15 Dec 2014)</b> — Align on technical support mobilised and next steps toward PRT and Investor Forum Davos AM2015 report back and highest level of support							▲					
<b>Project Packaging Alignment Workshop -Taskforce meeting (Dar, Feb 2015)</b> — Review outcomes and findings of expert and analysis from WEF BWG — Validate project reports prior to printing of catalogue for investors								▲				
<b>Private Finance Roundtable ( JHB, 9 Mar 2015)</b> — Gage private sector interest and recommendations for 23 shortlisted project pre CCII										▲		
<b>Ministerial meeting (Dar, 13 Mar 2015)</b> — Alignment to shortlisted projects and technical review outcomes										▲		
<b>Development Finance Roundtable (JHB, 16 Mar 2015)</b> — Secure development and prep financing for some shortlisted project pre CCII										▲		
<b>Presidential Roundtable ( Dar, 25 Mar 2015 )</b> — Status of phase 1 projects by taskforce presented to presidents — Mobilise public sector support and grants etc										▲		
<b>Central Corridor Industry and Investor Forum (Dar, 26 Mar 2015)</b> — Initial presentation/ roadshow of 23 phase 1 cornerstone packages to public										▲		

Source: World Economic Forum

The progress has been recognized as “phenomenal” and true “talk to action” by the AUC and industry experts, with information on over 120 sub-projects consolidated and standardized within a single reporting tool, and projects prioritized across five countries and three sectors with 23 projects selected for stage-1 focus. The criteria applied for selecting the stage 1 projects included strategic importance (industry), corridor linkage, project type and value proposition. The selection of projects was based on an analysis of available data and on dialogue and input from both public and private representatives of the relevant countries, local and international industry leaders. Not all 23 stage-1 projects have private sector potential as stand-alone projects, but comprehensively provide the cornerstones of the corridor.

### 3.2 The Acceleration Impact

The impact of the acceleration on the pilot is not easily quantifiable. However, as mentioned, considerable progress has been achieved along a number of dimensions, summarized below:

- **Acceleration Strategy and Roadmap Defined**  
Developed guiding strategy and phased approach; phase 1 for marketing the corridor, developing an equity story (i.e. the industrial and economic development plans for cargo volumes) and showcasing key cornerstone projects. Phase 2 to focus on detailed project preparation, securing finance and implementation.
- **Programme Decomposed into “sum- of-parts”, Understood and Prioritized**  
Clarified the scope of the corridor (\$18 billion) and decomposed the programme into 121 sub projects - i.e. its sum of parts. Furthermore, the project data was consolidated and standardized from a variety of stakeholders into an excel-based, automated project fiche tool and template. Finally, the cornerstone projects for phase 1 were selected by multi- stakeholder workshops held with public and private representatives (23 selected from 121 - \$9.7 billion) representing the five countries, and the three sectors (port, rail and road).
- **Technical Support & Funding Mobilized**  
Mobilized and managed independent technical experts

through the Business Working Group, the Development Bank of Southern Africa invested approximately \$400K in funds and internal resources to package the 23 projects for market sounding. This included analysing the business case economics and various studies available to better understand the projects, their potential and the type of investment or financing could be attracted. The 23 projects were grouped into four groups;

- **Group A:** Private finance opportunities<sup>1</sup> generating a revenue stream with feasibility or prefeasibility reports available and finance proposed models developed.
- **Group B:** Private finance opportunities under development<sup>2</sup> that should generate a revenue stream but a bankable feasibility is required.
- **Group C:** Development finance opportunities<sup>3</sup> which are not revenue generating, they do have feasibility or prefeasibility reports available with economic justification but will require public or development finance.
- **Group D:** Other finance opportunities<sup>4</sup> which have projects that are a blend of income generating and public-sector orientated projects, all projects within this category require project preparation and prefeasibility studies.

Furthermore, World Bank and the Development Bank of Southern Africa have indicated that they will be discussing potential support to Group B projects to a value of \$450 million.

- **Stakeholders Aligned and Engaged**  
More than ten workshops were held in various countries within nine months to ensure public and private dialogue, input and alignment. In particular, four private-sector roundtables were hosted to elicit private-sector suggestions for project packaging. The visibility with extensive press coverage of the programme created additional interest from industry – the Industry and Investors Forum held on 26 March in Dar es Salaam attracted over 200 participants.
- **Political Support and Pressure Secured**  
Interest from highest levels of government and private leaders assured ownership and delivery to tight timeline. The World Economic Forum Annual Meeting 2015 in Davos-Klosters, Switzerland, and the Presidential Round Table in Dar es Salaam with four Presidents participating ensured the highest level of support.
- **Public Agencies Enabled and Tools Created**  
The process entailed the job training and enablement of the respective public agencies involved, in particular topics such as project finance, bankability, financial modelling and project development offered. The Development Bank of Southern Africa acted as a key partner to deliver on this objective. A variety of generic excel based financial models and data assessment and/or standardization tools have been created that can be used as a basis for replicability.

### 3.3 Key Lessons for Acceleration Replicability

A number of enabling factors supported the progress on the Central Corridor. Examples of such enabling factors include that Corridor Countries have signed a mandate to cooperate in delivering on these projects. More so, a Project Management Unit or a Central Corridor development authority was established to monitor and drive the projects. This coordinating body made a big difference in ensuring relevant ministries and agencies were present at meetings. The countries also selected a taskforce where updates on the projects were provided with key officials from the different agencies and ministries represented – ensuring the correct priority projects on the Central Corridor were selected.

The seniority of the CC-TTFA Executive was respected by the different countries, presidents and ministries provided their support for the CC-TTFA and the Acceleration programme, which ensured that all agencies welcomed the programme and the initiative. The willingness of members to learn throughout the process ensured capacity building.

The support from World Economic Forum partners – the NEPAD agency, African Development Bank, Business Working Group members and project management support from The Boston Consulting Group – enhanced convening power, delivery of interesting content with professionalism which created enthusiasm for the programme.

The pilot acceleration was deemed a success with immense impact delivered, but as in many other large-scale and complex infrastructure programmes, there is room for improvement. When applying a similar acceleration process to other corridors or infrastructure programmes, the lessons learned include the following:

- **Scope timeline with contingencies**  
The process of packaging projects for such a forum is complex and adequate time needs to be allocated to this phase of the work, including time for follow-up interviews. Many meetings will be cancelled at last minute, which affects the timeline.  
*Recommendation:* Ensure adequate time for technical analysis and various consultations with relevant stakeholders, especially with public officials.
- **Focus on stakeholder management and alignment**  
The process required a detailed scoping of the projects, which included interviewing the relevant project managers and owners of the projects. Engagements such as interviews and personal discussions (in addition to roundtables/workshops) ensured buy-in and strong relationships which at times were critical in securing additional information not otherwise easily accessible, available or in written reports or documents.  
*Recommendation:* Stakeholder management and relationship building is a key success factor. Ensure project managers have the skills and willingness to secure the required relationships and instil trust.



#### – **Manage expectations**

Managing expectations is very important, especially where Government officials are concerned. Government officials are not always aware of the specific risks related to the key projects. It is necessary to schedule a risk workshop with relevant government officials, for them to understand the risks associated with each project and to develop the associated mitigations required to resolve these risks.

*Recommendation:* Host public roundtable on expectations and objectives before start of process and conduct interim observation and risk discussions throughout.

#### – **Identify champions early on**

As information on projects was in various formats, languages and locations, the initial kick-off of the programme was particularly challenging. Collection of information and consolidation into a standardized format at a central point with responsible individuals is critical. *Recommendation:* Responsible champions should be selected to collect information from various agencies. Champions should have clarity on the importance of their role and the minimum quality of information required.

#### – **Align on terms and project development stages**

Project documentation was not of the quality expected and not necessarily correctly linked to standardized project development stages (for example, some projects were identified at stage S3a (detailed structuring), after further investigation, research showed that the project is still at a S2 (pre-feasibility).

*Recommendation:* Agree and align on definitions of project preparation phases and requirements with agencies prior to process launch.

#### – **Enable financial understanding**

It was an observation that there was a clear misunderstanding of PPP financing structures and the regulatory environments. Coordinating bodies should be aware of the PPP regulatory environment in the different countries that they service.

*Recommendation:* When applying this to another corridor, the first step would be for the Project Manager to have a two- to three-day roundtable discussion with relevant country departments to understand the regulatory environment around PPPs or unsolicited bids. Also, capacity building focuses on the understanding of project finance principles and how financial models are created within the different sectors.

#### – **Emphasize transparency**

The lack of transparency and willingness to share information created uncertainty and mistrust. For example, information on failed concessions was omitted from project documents; this was uncovered with some due diligence.

*Recommendation:* Open sharing of information should be encouraged with benefits such as reduced investor anxiety emphasized.

#### – **Encourage consistent communication**

Private companies were frustrated with the projects as some were already at tender stage with RFPs issued, but would be retracted. Furthermore, feasibility studies and RFP terms were inconsistent for certain projects.

*Recommendation:* Procurement processes should be clear for all investors and should be understood by the different agencies – for the impact that the implementation of these policies might have when private sectors consider investing in a project.

## 4. Capacity Building

Africa faces a critical shortage of skills required for efficient infrastructure development. This not only includes technical and engineering skills, but also the project management, finance and legal skills needed to prepare and structure projects adequately. This dire situation is caused by low enrolment for technical degrees, emigration, lack of access to education and an increasing demand for skilled labour across sectors.<sup>7</sup> Only 4% of university students in Africa study engineering, manufacturing and construction, compared to 20% in Asia, yet the demand for engineers is rapidly increasing. For example, Nigeria alone requires 51,000 engineers to upgrade its electric power infrastructure.<sup>8</sup> Additionally, project management skills for oversight that ensures the efficient and quality delivery of projects on schedule and within budget are also in rare supply in Africa. Developing and retaining such skills requires time and experience - by catalysing the right investments and partnering with the private sector, skills can be developed to support ambitious cross-country programmes such as PIDA.

To achieve realistic outcomes within the Initiative's time and resource constraints while contributing to the overall goal of enablement, it was agreed that capacity building should address two key questions:

1. What existing vehicles or tools currently being developed by the African infra-initiative could be used or advanced?
2. How can the BWG contribute towards capacity building, specifically supporting the pilot project?

First, a core focus of the Initiative is to ensure the replicability of its efforts. Thus, all frameworks, tools and processes created are generic and adaptable (to a degree) so they can be replicated for other projects within PIDA, in Africa and other regions. The "acceleration repository" includes report outputs, methodologies, lessons learned, the PIDA PAP assessment tool, standardized project fiche templates, project reporting tools, standard checklists and workshop materials. This acceleration repository is only one of many available resources from AfDB, AUC, NEPAD and DBSA, all with the common objective of advancing infrastructure development. In addition to the tools created during the pilot, the acceleration process aims to enable and capacitate the local institutions to better interact and understand the requirements from a private sector perspective through dialogue. These continued efforts and engagements foster stronger relationships for continued collaboration, the alignment of interests, and standardization for the accelerated development of infrastructure programmes.

Second, the BWG has been recognized as a core enabler to help build the necessary capacities for infrastructure development in Africa. Capacity building is a very broad concept and can be managed in multiple ways. By providing apprenticeships, sponsorships, donations and training programmes, knowledge can be shared.<sup>9</sup> Knowledge sharing could significantly reduce the infrastructure investment need, for example, by sharing information on the most innovative construction processes, new building

materials and designs, and leaner designs using smart materials; this could potentially reduce infrastructure and maintenance costs by up to 50%.<sup>10</sup> Initiatives such as the Transnet Academy and/or General Electric's swap programmes provide a great learning opportunity to import international experience and contribute significantly towards skills development in the region.<sup>11</sup> By providing staff via secondments to public entities for a limited period of time, the host organization is capacitated, which facilitates the continued transfer of skills. Partnerships with state-owned enterprises (and local companies) also allow for the transfer of knowledge and skills – either explicitly through capacity-building programmes or implicitly through learning and adaption. The DBSA's sponsorship for technical assistance to the CC-TTFA to package stage-1 projects and secondments from The Boston Consulting Group was prime examples of the BWG supporting the pilot acceleration and enablement of local public agencies.

## 5. Knowledge Tools and Reports

Knowledge tools created as part of the Initiative not only guide the project acceleration efforts, but also aim to enable governments and other institutions to replicate the successes and progress achieved. Documenting best practices and lessons learned not only helps avoid typical mistakes made in similar programmes, but also capacitates individuals applying these methods. Knowledge tools, whether report publications, templates or process maps, will form part of the acceleration repository available to governments, institutions and companies.

The following Initiative publications and topics aim to enable the environment for African infrastructure development:



## 5.1 Transnational Infrastructure Programme Management

Increasingly, political leaders in Africa share a common vision of regional integration: to open up regional markets, link production clusters in different countries, facilitate the free movement of goods, services and people, and foster political stability and peace. Consequently, a common ambition is to promote transnational infrastructure as the physical backbone of this regional integration, and initiatives such as PIDA PAP are under way to give greater priority to cross-border programmes. However, the realization of these programmes is hampered by the tremendous challenges they face, particularly due to their transnational nature.

Although these challenges can arise in any region, they are particularly severe in Africa. The continent is very heterogeneous, with 34 official languages (in addition to a plethora of local tongues) and more than 40 currencies, with great variation in the financial capacities of individual countries. Among the world's seven regions, Africa ranks first in the number of landlocked countries and in land border's share of total border. It ranks second in the average number of neighbouring countries, with 4.5 (first is Central Asia, mainly because of Russia's 14 border countries), and ranks third in average country size. Taken together, all the indicators point towards a strong need to build infrastructure projects across borders in Africa – a stronger need than in other regions of the world.

Despite this need, transnational infrastructure is still greatly underdeveloped on the African continent. Levels of intraregional trade are low, both cause and consequence of the missing interlinkages in transport: on the one hand, low traffic volumes render most transnational transport projects financially unviable and therefore difficult to find financing for; on the other, the lack of adequate transport facilities seriously hampers intraregional trade by significantly increasing trade costs.<sup>12</sup>

The various challenges of Transnational Infrastructure Programmes have been categorised into either financial, technical, regulatory, personnel/cultural and governance-related challenges. Examples of each in turn include:

- *Financial challenges* of participating countries to agree on sharing the risks, costs and benefits, and to implement the agreement or to establish an optimal financing structure including currency debates
- *Technical challenges* to align different technical standards, operating requirements and construction risks.
- *Regulatory challenges* to provide and/or enforce legal agreements, harmonize different procedures, and manage the risk of regulatory changes in all participating countries,
- *Personnel/Cultural challenges* to build trusting relationships, regardless of political or historical differences, overcome language barriers, coordinate a large number and variety of stakeholders with diversified interests,
- *Governance-related challenges* to align the distinctive national agendas, and ensure all participating countries have appropriate ownership of the programme, coordinate responsibilities within and between the participating countries, overcome national interests in staffing etc.

These various challenges, however, are not independent of each other. One challenge can strongly influence the others; for instance, differing national agendas and a lack of ownership in a participating country could obstruct a proposed high-quality off-take agreement. Similarly, language barriers or a lack of trust could hamper negotiations on sharing costs and revenues.

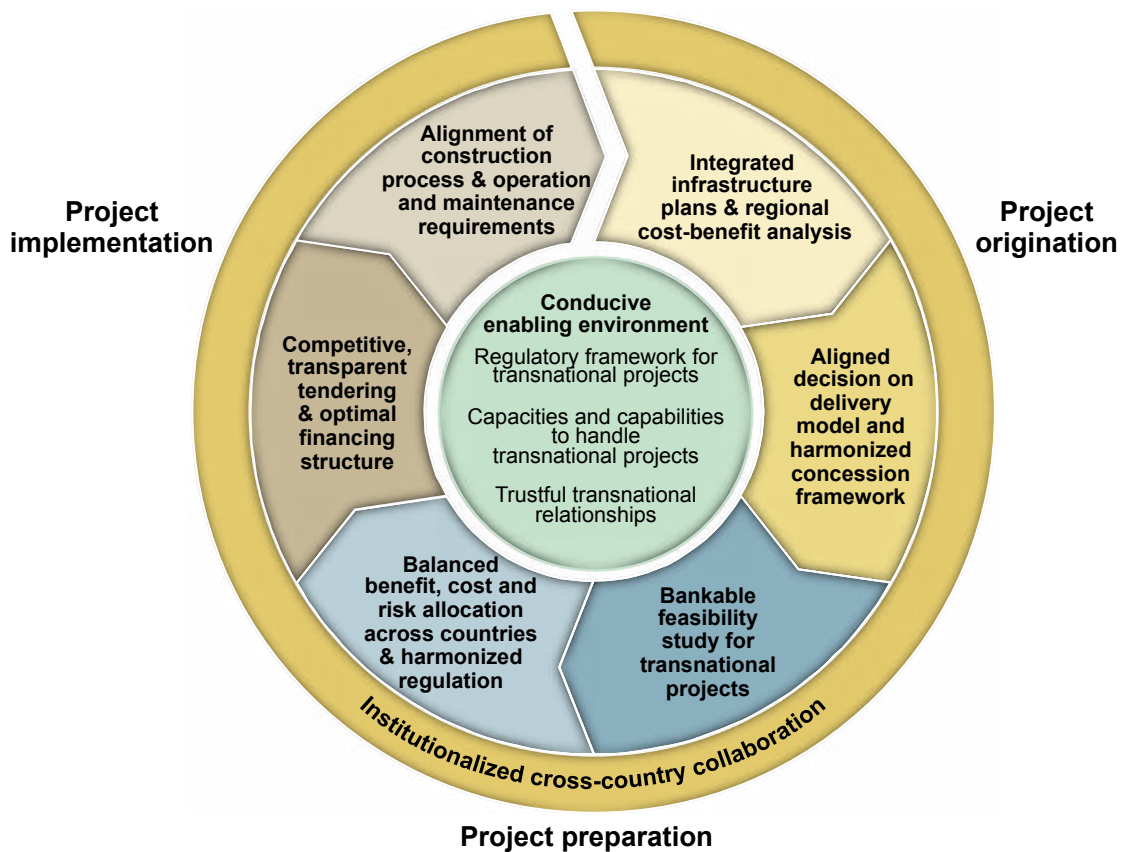
Moreover, the relevance of each challenge differs from country to country, according to each country's economic, political, social and regulatory conditions; and, the challenges are not equally relevant for all types of infrastructure programme. As a general rule, the technical challenges are more relevant to those programmes in which the collaboration of two or more countries is indispensable, rather than merely efficiency-enhancing.

The challenges might vary in intensity during different phases of a programme's life cycle (origination, preparation, implementation and operation). The challenges tend to be at their most intense during the preparation phase, which covers feasibility studies, technical design, financing and procurement. The reasons are that this phase is the most varied and most uncertain one, and that the contractual

foundation is laid during the preparation period for the programme's entire life cycle: the planners need to establish a business case for the programme, broker agreements on the split of costs and revenues, secure financing and define technical standards. In the following phases, during construction and operation, the environment tends to be less volatile and risky; some serious challenges can still arise, of course – not least, the challenge of enforcing or adapting agreements if required.

The maturity of public institutions remains inadequate, and serious shortcomings persist in the capability of/for managing transnational infrastructure programmes. Finally, unlike the European Union, for instance, Africa's Regional Economic Communities lack the resources and mandate to drive the implementation of such programmes. Therefore, the *Managing Transnational Infrastructure Programmes in Africa – Challenges and Best Practices* report, developed by the Africa Strategic Infrastructure Initiative, presents a potential best practice framework for the management of transnational infrastructure programmes and to attempt addressing the above mentioned challenges in Africa (Figure 4).

Figure 5: Transnational Infrastructure Programme – Management Best Practice Framework



Source: World Economic Forum, adapted from 2013

The framework is structured along the various phases of an infrastructure programme (i.e. origination, preparation and implementation). In the origination phase, the initial priority is to integrate the individual national infrastructure plans. To achieve that, the programme sponsors in the involved countries should devise a regional sector-planning framework, with appropriate institutional arrangements. Given that the costs and benefits (both monetary and other) of a cross-border infrastructure facility are often unequally distributed across participating countries, it is important to conduct a regional cost-benefit analysis to establish a regional business case. As a second step, the involved governments should take an aligned decision on the delivery model and should harmonize their concession frameworks, ideally issuing a single concession for the whole facility rather than several.

A bankable feasibility study is needed for the programme's preparation phase. Next, the costs, benefits and risks of the programme need to be carefully allocated to the involved countries. This work should be assigned to a strong, impartial and respected arbiter, such as a regional development bank. A further imperative during this phase is to harmonize the regulations and technical standards across the various countries. Where possible, existing national standards should be adopted and regulations should be radically simplified.

For transnational infrastructure programmes to flourish, a conducive environment is required, including an appropriate regulatory system in all countries. Moreover, the environment should have the right management capacities and capabilities in the public sector (e.g. ministries and public agencies), as well as in national and regional finance institutions (e.g. development banks), parastatals (e.g. national utility and railway companies) and the programme management unit (e.g. the Special Purpose Public Agency). A final crucial factor is good relationships between the relevant parties, which requires trust, and investment in time and effort to build those relationships. Institutions, treaties and agreements can support bilateral and multilateral cooperation, but they are no substitution for trust.

Finally, during the implementation phase, a competitive, transparent tendering process and an optimal financing structure will be required. For example, in the Economic Community of West African States (ECOWAS) region, the procurement process has increased in transparency due to a procurement committee staffed by all participating countries and involving neutral experts.<sup>13</sup> To secure the best financing structure, the programme sponsors should establish regional financing instruments and make use of risk-mitigating instruments such as guarantees. During the construction phase, the processes should be aligned across all participating countries to ensure execution remains on schedule, so that, for example, different stretches of a railway can be interconnected at a border. The programme sponsors should also ensure that the operation and maintenance of the infrastructure facility is properly coordinated across borders.

## 5.2 A Principled Approach to Infrastructure Project Preparation Facilities

A lack of well-prepared projects is a major obstacle to infrastructure development in emerging and developing countries, and hence to their general economic development. In Africa, for example, the infrastructure shortfall involves the sacrifice of about 2% of GDP growth per annum. Even a modest increase to the pipeline of well-prepared projects would impact beneficially on local economies, improving the welfare of communities and boosting the investment opportunities available to the market. Unfortunately, existing IPPFs – with their budget constraints and operational issues – often lack the ability to deliver these benefits and as such much-needed infrastructure projects often struggle to progress beyond the concept stage. The reasons for the continued struggle are multi-dimensional, as project preparation is a costly, lengthy, complex and risky undertaking. In Africa, preparing bankable projects is particularly challenging, largely owing to a shortage of appropriate capabilities and capacities, insufficiently enabling regulatory environments, inadequate project governance, and limited financial resources. Without sufficient funds to pay for high-quality project preparation, projects rarely get off the ground enough to reach tender, let alone implementation.

Since governments also suffer from constrained public budgets, multilateral institutions and donors have acted as a major source of preparation funding for infrastructure projects. However, these traditional sources cannot fully meet the high financial requirements by themselves, as recently acknowledged in a report by the World Bank (2013). Until now, the private sector has understandably been cautious about getting involved during these critical early stages of a project. This hesitancy highlights a paradox within infrastructure financing: while there is plenty of private-sector interest in financing bankable projects, the available project-preparation resources are insufficient to advance the projects to a bankable state; so the pipeline of well-prepared projects is meagre, and investment opportunities are limited.

Governments and development banks do attempt to solve the many complexities of project preparation and thereby to enhance the pipeline of bankable projects. In particular, they have made additional money available to pay for the complex and lengthy project preparation process and consequently have supported and created many Infrastructure Project Preparation Facilities (IPPFs).<sup>5</sup> Unfortunately, many of these IPPFs have suffered from various limitations, and have made only a modest impact on the vast challenges. For example, a study conducted by the Infrastructure Consortium of Africa (2012), with an initial analysis of 67 facilities, identified 17 core facilities that could be classified as IPPFs, of which only 12 were operational at the time.<sup>6</sup> These existing African IPPFs have an early-stage financing capacity of barely \$0.2 billion, while the PIDA portfolio faces early-stage costs of \$3.1 billion<sup>7</sup> – implying a preparation-financing gap of about \$2.9 billion.<sup>8</sup>

Hence, the need for a new approach to IPPFs. Such an approach is one that aligns and optimizes the objectives, strategy and portfolio management of an IPPF, and enables it to operate effectively, efficiently and sustainably. The approach should also extend the sources and types of financing available during the early stages – beyond the usual public sources – to include private and impact investors. Furthermore, to ease the bottlenecks during project preparation, the approach should not only leverage the private sector’s financial resources but also tap into its expertise through closer public-private collaboration.

The report ‘A Principled Approach to Project Preparation Facilities’, mindful of the complexity and limitations of project preparation and existing IPPFs, proposes a new-principled approach to the challenges of financing preparation of infrastructure projects. The World Economic Forum, in partnership with industry experts, identified five key principles of success for IPPFs, based on best practices observed globally. The principles are illustrated within the figure 5 below and are:

- Clear objectives and focused strategy
- A self-sustainable financing model
- Excellence in portfolio-management
- Cost-efficient and value-adding advisory services
- Stringent governance and accountability.

**Figure 6: Principles-of-Success Framework for IPPFs.**



Source: World Economic Forum

Incorporating these five principles into the IPPF design, and the result should be very positive, including higher project success rate, greater efficiency and sustainability of IPPFs, and ideally, greater scale. However, the design of any IPPF would be heavily dependent on the underlying circumstances and strategic objectives. With certain instruments and structuring aspects, such as tiered participation rights and earmarking of funds, an IPPF’s design could also facilitate the participation of a variety of investors.

The report also provides a wealth of considerations for the design of an IPPF. It should serve as a reference guide, to introduce and enable new models and partnerships during project preparation. The target audience of the report includes both private- and public-sector decision-makers

involved in the development and financing of infrastructure projects.

While project-preparation financing does tend to pose a serious challenge, there are also other issues that governments should continue to engage and remedy – issues such as institutional coordination and agencies’ capacity, which need to be enhanced if the project pipelines are to flow more smoothly. A better-prepared pipeline of projects should produce benefits for many stakeholders: better value for users, reduced project risks for investors, and increased opportunities for private-sector businesses via contracts for constructing and/or operating the new assets. In sum, the upshot would be better-planned and new infrastructure assets, with abundant positive implications for social and economic development.

## 6. Next Steps and Way Forward

Concrete next milestones have been defined for the Initiative during its final phase to ensure continued momentum. As mentioned, the World Economic Forum will be handing the Initiative over to the NEPAD Agency in June 2015. The NEPAD Agency will continue the work and replicate the acceleration for further pilots, using the tools and processes created over the past years, adapting and enhancing them as they systematically progress through the remaining PIDA programmes. The NEPAD Agency has already initiated transition discussions, defined timelines and engaged with resource mobilization to ensure readiness from June 2015 onwards.

The World Economic Forum will continue its contribution by facilitating public-private collaboration for infrastructure, with particular focus on Sustainable Development and Financing for infrastructure.

Special thanks to all World Economic Forum Members and Partners for their continued support of the Initiative, without which the progress and successes could not have been achieved.

# Appendix

## List of Abbreviations

AfDB	African Development Bank
APMU	Acceleration Project Management Unit
AUC	African Union Commission
BNDES	Brazilian Development Bank
BWG	Business Working Group
CC-TTFA	Central Corridor Transit Transport Facilitation Agency
DBSA	Development Bank of Southern Africa
DRC	Democratic Republic of Congo
ECOWAS	Economic Community of West African States
ESPF	Early Stage Project Financing
IPPF	Infrastructure Project Preparation Facility
NEPAD	New Partnership for Africa's Development
PAP	Priority Action Plan
PIDA	Programme for Infrastructure Development in Africa
TIPM	Transnational Infrastructure Programme Management

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## Initiative Reports

### Transnational Programme Management for Infrastructure

<http://www.weforum.org/reports/african-strategic-infrastructure-initiative-managing-transnational-infrastructure-programmes>

### A Business Approach to Project Acceleration

<http://www.weforum.org/reports/strategic-infrastructure-africa-business-approach-project-acceleration>

### A Principled Approach to Infrastructure Project Preparation Facilities

[http://www3.weforum.org/docs/WEF\\_African\\_Strategic\\_Infrastructure\\_Initiative\\_2015\\_IPPF\\_report.pdf](http://www3.weforum.org/docs/WEF_African_Strategic_Infrastructure_Initiative_2015_IPPF_report.pdf)

## Overview of PIDA programmes per sector<sup>9</sup>

### PIDA PAP—energy sector

Project	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
1. Great Millennium Renaissance Dam	Develop a 5,250 MW plant to supply domestic market and export electricity on EAPP market	S4	8,000	Ethiopia, Nile basin	COMESA/IGAD	Eastern
2. North–South Power Transmission Corridor	8,000 km line from Egypt through Sudan, South Sudan, Ethiopia, Kenya, Malawi, Mozambique, Zambia, Zimbabwe to South Africa	S2	6,000	Kenya, Ethiopia, Tanzania, Malawi, Mozambique, Zambia, Zimbabwe, South Africa	COMESA/EAC/SADC/IGAD	Southern
3. Mphamda-Nkuwa	Hydroelectric power plant with a capacity of 1,500 MW for export on the SAPP market	S2	2,400	Mozambique, Zambezi basin	SADC	Southern
4. Lesotho HWP phase II hydropower component	Hydropower programme for power supply to Lesotho and power export to South Africa	S2	800	Orange-Senqu River Basin	SADC	Southern
5. Inga III Hydro	4,200 MW capacity run of river hydropower station on the Congo river with eight turbines	S2	6,000	DRC Congo River	ECCAS	Central
6. Central African Inter-connection	3,800 km line from the DRC to South Africa through Angola, Gabon, Namibia and to the north to Equatorial Guinea, Cameroon and Chad	S1	10,500	South Africa, Angola, Gabon, Namibia, Ethiopia	ECCAS	Central
7. Sambagalou	128 MW of hydropower capacity, 930 km from the mouth of the Gambia River to supply Senegal, Guinea, Guinea Bissau and Gambia	S3	300	Senegal, OMVG	ECOWAS	Western



Project	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
8. West Africa Power Transmission Corridor	2,000 km line along the coast connecting with the existing Ghana– Nigeria line with a capacity of 1,000 MW	S2	1,200	Guinea, Guinea Bissau, Gambia, Sierra Leone, Liberia, Côte d'Ivoire, Ghana	ECOWAS	Western
9. North Africa Transmission	2,700 km line from Morocco to Egypt through Algeria, Tunisia and Libya	S2	1,200	Morocco, Algeria, Tunisia, Libya, Egypt	AMU	Northern
10. Kaleta	Hydropower generation of 117 MW	S3	179	Guinea – OMVG	ECOWAS	Western
11. Batoka	Hydroelectric plant with a capacity of 1,600 MW to enable export of electricity	S3	2,800	Zambia/ Zimbabwe Zambezi basin	COMESA/ EAC	Eastern
12. Ruzizi III	Hydroelectric plant with a capacity of 145 MW to share power among Rwanda, Burundi and DRC promoted by CEPGL	S3	450	Rwanda/DRC	COMESA/ EAC	Eastern
13. Rusumo Falls	Hydropower production of 61 MW for Burundi, Rwanda and Tanzania	S3	360	Nile River Basin	COMESA/ EAC	Eastern
14. Uganda-Kenya Petroleum Products Pipeline	300 km long pipeline for a lower cost mode of transport of petroleum products	S4	150	Uganda, Kenya COMESA/EAC	Eastern	
15. Nigeria–Algeria Pipeline	4,100 km gas pipeline from Warri to Hassi R'Mel in Algeria for export to Europe	S2	NA	Nigeria, Niger, Algeria	UMA/ ECOWAS	Northern, Western

## PIDA PAP—transport sector

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
1. TAH programme	This is phase I of the continental connectivity programme that focuses on completion and standardization of the TAH missing links by 2030	S2/S3	2,150	Africa	Continental	Continental
2. Single African Sky phase 1 (design and initial implementation)	Single African Sky is a continental programme that will create a high-level, satellite-based air navigation system for the African continent	S3	275	Africa	Continental	Continental
3. Yamoussoukro Decision implementation	Accelerate Yamoussoukro Decision implementation by identifying countries that are ready to fully implement it, and discussing and agreeing with both their governments and airlines to launch the voluntary club on a full membership basis	S4	5	Africa	Continental	Continental
4. Smart corridor programme phase I	This programme includes both the development of model smart corridor technology and the design and the implementation of a continental and regional corridor efficiency monitoring system	S1	100	Africa	Continental	Continental
5. Northern Multimodal Corridor	This programme is designed to modernize the highest priority multimodal ARTIN corridor on modern standards (climbing lanes and urban bypasses) in East Africa. This programme aims to facilitate travel by people and goods across the borders between Kenya, Uganda, Rwanda, Burundi and DRC with a spur to South Sudan	S3/S4	1,000	Kenya, Uganda, Rwanda, Burundi	COMESA/ EAC	Eastern

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
6. North-South Multimodal Corridor	This programme is designed to modernize the highest priority multimodal ARTIN corridor in Southern Africa on modern standards and facilitate travel of people and goods across the borders between South Africa, Botswana, Zimbabwe, Zambia, Malawi and DRC	S3/S4	2,325	DRC, Zambia, Zimbabwe, South Africa,	COMESA/ EAC/ SADC	Eastern
7. Djibouti-Addis Corridor	This programme would resuscitate the rail system in a high priority multimodal ARTIN corridor in Eastern Africa and increase the flow of goods across the border between Djibouti and Ethiopia. It would also design and implement a smart corridor system for both road and rail transport	S3/S4	1,000	Djibouti, Ethiopia	COMESA/ IGAD	Eastern
8. Central Corridor	This programme would modernize the third priority ARTIN corridor in East Africa and facilitate travel for people and goods across the borders between Tanzania, Uganda, Rwanda, Burundi and DRC	S3/S4	9,700 <sup>1</sup>	Tanzania, Uganda, Rwanda, Burundi, DRC	COMESA/ EAC	Eastern
9. Beira-Nacala Multimodal Corridors	Rehabilitation/ reconstruction of railway and road links, including one-stop border posts along the corridors. Improvement of capacity at the ports, including capital dredging at Beira Port. Natural resources development, including Moatize Coal Field in the Zambezi Valley will use the ports as main export gateways	S3/S4	450		COMESA/ SADC	Eastern

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
10. Lamu Gateway Development	This programme aims to respond to the Eastern Africa challenge in developing sufficient port capacity to handle future demand from both domestic sources and landlocked countries. The priority action will be to develop the Lamu gateway	S3/S4	5,900	Kenya, Uganda, Rwanda, Burundi	COMESA/ SADC/ EAC	Eastern
11. Southern Africa Hub Port and Rail Programme	This programme aims at responding to Southern Africa challenge in developing sufficient port capacity to handle future demand from both domestic sources and landlocked countries	S1	2,270	REC members	SADC	Southern
12. Abidjan-Lagos Coastal Corridor	This programme would modernize the most heavily travelled ARTIN corridor in West Africa (trade facilitation, OSBPs, capacity enhancement and implementation of PPP) for five countries: Côte d'Ivoire, Ghana, Togo, Benin and Nigeria	S3/S4	290	Nigeria, Benin, Toga, Ghana, Côte d'Ivoire	ECOWAS	Western
13. Dakar-Niamey Multimodal Corridor	This programme is designed to modernize the most heavily travelled ARTIN corridor in West Africa (trade facilitation, OSBPs, capacity enhancement and implementation of PPP) for four countries: Senegal, Mali, Burkina Faso, Niger	S3/S4	590	Senegal, Mali, Burkina Faso, Niger	ECOWAS	Western

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
14. Praia-Dakar-Abidjan Multimodal Corridor	<p>This programme would improve marine transport and the connection between island and mainland countries by creating a new maritime service between regional ports and facilitating this with a modern information system that links the maritime service with ports and road corridor in the Dakar-Abidjan Corridor.</p> <p>This programme would also modernize one of the most heavily travelled ARTIN corridor in West Africa (trade facilitation, OSBPs, capacity enhancement possibly through PPP) for eight countries: Cape Verde, Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire</p>	S2 to S4	150	Cape Verde, Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire	ECOWAS	Western
15. Abidjan-Ouagadougou/Bamako	This programme would modernize and rehabilitate the multimodal corridor that suffered during civil war in Côte d'Ivoire	S3/S4	540	Côte d'Ivoire, Burkina Faso, Mali	ECOWAS	Western
16. West Africa Hub Port and Rail Programme	This programme aims at responding to the future capacity problems in West African ports. This programme has two components: (a) a regional hub port and rail linkage master plan and (b) port expansion	S1	2,140	15 countries, PMAWCA	ECOWAS	Western
17. West Africa Air Transport	This programme aims at increasing the air transport service levels in West Africa, which are currently limited by the lack of a regional air hub	S1	420	15 countries	ECOWAS	Western
18. Pointe Noire, Brazzaville/Kinshasa, Bangui, N'djamena Multimodal Corridor	This multimodal programme would resuscitate the river transport in the Congo-Ubangi River Basin and modernize road transport along the corridor	S3/S4	300	Congo/DRC/Central African Republic	ECCAS	Central

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
19. Kinshasa-Brazzaville Bridge Road and Rail Project & Rail to Ilebo	This programme would provide infrastructure to improve the regional transportation and trade systems through the construction of a fixed crossing linking Kinshasa and Brazzaville, ensuring continuity in railway traffic from Matadi and Pointe-Noire to the eastern border of the DRC and, beyond that towards the eastern and southern parts of Africa	S2	1,650	Congo/DRC	ECCAS	Central
20. Douala-Bangui Douala-Ndjamena Corridor	This programme would modernize the highest priority multimodal ARTIN corridor in Central Africa and facilitate travel for people and goods across the borders between Cameroon, Chad and the Central African Republic	S3	290	Cameroon/ Central African Republic/ Chad	ECCAS	Central
21. Central African Inter-Capital Connectivity	This programme is specially designed for Central Africa, where one of the key issues for regional integration is the missing links in several inter-capital connectors	S2	800	Cameroon/ Chad/ Central African Republic/ Congo/ DRC/ Gabon/ Burundi/ Angola	ECCAS	Central
22. Central Africa Air Transport	This programme aims at increasing the air transport service levels as well as airport improvement in Central Africa, which are currently limited by the lack of a regional air hub	S1	420		ECCAS	Central
23. Central Africa Hub Port and Rail Programme	This programme aims at responding to the future capacity problems in Central African ports. This programme has two components: (a) a regional hub port and rail linkage master plan and (b) port expansion	S1	1,400	Cameroon/ Chad/ Central African Republic/ Congo/ DRC/ Gabon/ Burundi, PMAWCA	ECCAS	Central

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
24. Trans-Maghreb Highway	This programme is designed to improve travel for people and goods across the Maghreb countries, which have had their trade and travel limited by artificial barriers between countries at the borders. This programme would design and implement a smart corridor system along the highway and install one-stop border posts	S3/S4	75	Morocco to Egypt through Algeria, Tunisia and Libya	AMU	Northern

## PIDA PAP – transboundary water resource sector

Programme	Description	Stage	Cost (US\$ millions)	Countries	REC	Region
1. Palambo	Regulation dam to improve navigability of Obangui River with added hydropower component	S2	155	Congo River Basin	ECCAS	Central
2. Fomi	Hydropower station in Guinea with irrigation water supply for Mali and regulation of the Niger river (nine countries)	S3	384	Niger River Basin	ECOWAS	Western
3. Multisectoral Investment Opportunity Studies	Identification and preparation of investment programmes in the basin	S1	1	Okavango River Basin	SADC	Southern
4. Lesotho HWP Phase II – water transfer component	Water transfer programme supplying water to Gauteng Province in South Africa	S3	1,100	Orange-Senqu River Basin	SADC	Southern
5. Goubassy	Multipurpose dam located in Guinea: regulation of the Senegal river (four countries)	S2	NA	Senegal River Basin	ECOWAS	Western
6. Noumbiel	Multipurpose dam with hydropower generation (for Burkina Faso and Ghana) component	S1/S2	NA	Volta River Basin	ECOWAS	Western
7. Nubian Sandstone Aquifer System	Implementation of regional strategy for the use of the aquifer system	S4	5	Nubian Sandstone Aquifer System	UMA	Northern
8. North-West Sahara Aquifer System	Prefeasibility studies for improved use of the aquifer system	S2	2.5	North West Sahara Aquifer System	UMA	Northern
9. Lullemeden Aquifer System	Prefeasibility studies for improved use of the aquifer system	S2	10	Lullemeden and Taoudeni/Tanezrouft Aquifer System	UMA	Northern

## PIDA PAP—ICT sector

Programme	Description	Stage	Cost (US\$ mil- lions)	Countries	REC	Region
1. ICT Enabling Environment	This programme would improve the environment for the private sectors to invest in high-speed broadband infrastructure	S2	25	Continental	Continental	Continental
2. ICT Terrestrial for Connectivity	This programme has two main components: secure each country connection by at least two broadband infrastructure and ensure the access to submarine cable to all landlocked countries	S3	320	Continental	Continental	Continental
3. Internet Exchange Point (IXP) programme	The aim of this programme is to provide Africa with adequate internet node exchange to maximize internal traffic	S3	130	Continental	Continental	Continental



## Central Corridor Phase 1 Projects

Project	Group	Project ID	F E L Stage	Country	S u b - sector	Value (USD 'm)
Dar Port: Future Berths 13 & 14	A	32	3a	Tanzania	Ports	462
Dar-Isaka-Keza-Kigali/Gitega-Musongati Railway Line	A	65	S3a	Tanzania, Burundi, Rwanda	Rail	5500
Isaka-Mwanza Railway Line	A	45	S3a	Tanzania	Rail	350
Uvinza-Musongati Railway Line	D	40	S2	Tanzania	Rail	N/A
Tabora-Kigoma and Kaliua-Mpanda Railway Line	D	68	S2	Tanzania	Rail	978
Kalemie-Kindu-Kamina-Lubumbashi Railway Line	D	53	S1	DRC	Rail	631
Dar-Chalinze Toll Road	A	71	S1	Tanzania	Road	411
Nyahua - Chaya Road	C	121 (1)	S3a	Tanzania	Road	89
Malagarasi-Uvinza Road	C	121 (4)	S3	Tanzania	Road	32
Kyotera-Mutukula Road	C	100	S2	Uganda	Road	38
Ruhwago-Bujumbura-Rumonge Road	C	123	N/A	Burundi	Road	117
Ngoma-Bugesera-Nyanza Road	C	82	S3	Rwanda	Road	152
Port Kalundu-Uvira-Bukavu-Goma-Rutshuru-Bunagana Road	C	114	S1	DRC	Road	700
Bukavu Kisangani Road	D	130	S1	DRC	Road	N/A
Central Corridor Missing Link - Urambo-Kaliua Road	D	121 (2)	S2	Tanzania	Road	35.8
Central Corridor Missing Link (Kazilambwa-Chagu)	D	121 (3)	S2	Tanzania	Road	42
Highway to Bugesera Airport Road	D	119	S1	Rwanda	Road	N/A
Navigability of the Akagera River	B	19	S3a	Rwanda	IWW	165
Port Bell & Jinja Pier Upgrading	B	18	S2	Uganda	IWW	30
Kigoma Port	B	25	S2	Tanzania	IWW	N/A
Mwanza South Port	B	122	S2	Tanzania	IWW	30
Port: Lake Tanganyika (Kigoma-Bujumbura)	D	36	S2	Burundi	IWW	19
Dredging, Rehabilitation and modernization of Kalundu and Kalemie Port	D	16	S1	DRC	IWW	N/A

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## Endnotes

1. The Boston Consulting Group has provided three strategic secondments to the World Economic Forum since 2012 to fulfil and support the required activities of the Initiative.
2. Available via the link provided in the appendix of this report.
3. BWG Private Sector Interest Survey July 2013; Programmes are classified as “high private sector interest” if at least two companies express willingness to play a core role in the acceleration of the specific programme, and at least two companies offer to play a supporting role. The seven shortlisted programmes included: Beira Nacala Multimodal Corridor; Southern Africa hub, rail and port programme; Northern Multimodal Corridor; Central Corridor; West Africa hub, rail and port programme; North South Multimodal Corridor; Mphanda Nkuwa hydroelectric power plant.
4. The Central Corridor was identified as the first pilot, with the Beira Nacala Multimodal Corridor as second, and the West Africa hub, rail and port programme as third. The Central Corridor is a multimodal transport system (road, rail and port) from the Port of Dar es Salaam (Tanzania) to Uganda, Burundi, Rwanda and DRC. This corridor is the preferred logistics and commodities transportation route in the region, as it connects the landlocked countries to the sea with a single border crossing.
5. The pilot objective would be to document a generic but structured approach to address the complexities of large programmes, which can typically be replicated for the remaining PIDA projects.
6. An integrated multimodal transport programme (road, rail and port) across five countries (Tanzania, Burundi, Rwanda, Uganda and DRC) with an investment need of approximately \$18 billion, with 121 sub-projects reported.
7. David Bloom, David Canning and Kevin Chan, February 2006, *Higher Education and Economic Development in Africa*, Harvard University.
8. African Economic Outlook, 2012, *Education & Skills Mismatch*: [http://www.africaneconomicoutlook.org/theme/youth\\_employment/education-skills-mismatch/](http://www.africaneconomicoutlook.org/theme/youth_employment/education-skills-mismatch/). Additionally, Africa lacks people with artisan skills, driven by missing capacity and low quality vocational training. For example, in Senegal, of 400,000 people completing apprenticeships every year, only 7,000 receive formal vocational training. Refer to SA Commercial Prop News, 8 May 2013, *SA running short of Artisan Skills*: <http://www.sacommercialpropnews.co.za/business-specialties/property-construction-development/5944-sa-running-short-of-artisan-skills.html>.
9. GE agreed to cover \$2 million to upgrade and equip the Government Technical College in Nigeria’s Cross River State. The school will supply technicians for GE’s multi-billion dollar factory in Calabar that manufactures generator turbines, coaches for trains, aircraft engines, as well as hospital equipment. More at: <http://afkinsider.com/61131/closing-africas-skill-gap-offers-private-sector-opportunities/#sthash.nyqVDnMq.dpuf>.
10. Research by Portland Cement Association, with smart concrete able to fix itself with dormant bacteria, a road project with a lifetime of 15 years could be extended to 30 years. By utilizing sector-specific project preparation templates, the project preparation cycle of a road project could be reduced and non-value adding costs avoided.
11. The private sector can also benefit from localization and stronger local partnerships.
12. Numerous other reasons for the low level of intra-African trade exist, such as the small size of the markets, low production capacities, limited trade and investment opportunities, weak human and institutional capacities, political instability and insufficient trade facilitation. Other factors curtailing potential trade include the lack of complementarity, lack of diversification of production structures, high production costs, inadequacy of other forms of infrastructure (e.g. ICT), shortcomings in soft infrastructure (e.g. import quotas, anti-dumping regulations, countervailing duties, border tax adjustments, subsidies and technical barriers such as sanitary measures and rules of origin) and excessive red tape (Barka, 2012).
13. ECOWAS Tender commission: <http://ecowstc.org/>.







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