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UNION AFRICAINE

UNIÃO AFRICANA

Addis Ababa, Ethiopia

P. O. Box 3243

Telephone: 5517 700

Fax: 5517844

Website: www.Africa-union.org

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**REPORT OF THE COMMISSION ON INFRASTRUCTURE DEVELOPMENT
IN AFRICA (PIDA)**

I. INTRODUCTION

1. Africa commands a powerful position on the world stage. It is seen as a land of opportunity —an emerging destination of choice for many investors and development actors as they look for high-growth markets, despite the ongoing economic turmoil and the lingering effects of the financial crisis and recession. In this rapidly changing global environment, Africa needs to take advantage of these emerging conditions that will substantially boost trade, spark growth and create jobs. But right now, it is not capable of reaping the full benefits of its resources. One of the major problems is infrastructure gap and the solution is the Programme for Infrastructure Development in Africa (PIDA).

2. The 12th Assembly of Heads of State and Government adopted Declaration Assembly/ AU/Decl.1 (XII) requesting the African Union Commission (AUC) to formulate the Programme for Infrastructure Development in Africa (PIDA), whose elaboration was officially launched in Kampala, Uganda, in July 2010. Africa's leading continental organizations, including AUC, NEPAD Planning and Coordinating Agency (NPCA) and the African Development Bank (AfDB), have worked for years to address the infrastructure deficit. In addition, the G20 Infrastructure Action Plan, Infrastructure Consortium for Africa (ICA), EU-Africa Infrastructure Trust Fund and Africa Infrastructure Country Diagnostic all highlight the importance of regional infrastructure for Africa's growth.

3. PIDA provides new analysis and insights to bring together, under one coherent programme, existing or previous continental infrastructure initiatives such as the NEPAD Short Term Action Plan, the NEPAD Medium to Long Term Strategic Framework, the AU Infrastructure Master Plans and the African water vision. It fills in gaps and, based on previous lessons, assigns appropriate weight to the value of local ownership, the necessity of both hard and soft interventions, the need for diverse financing and the importance of sound implementation strategies. Underpinned by an extensive consultation and analytical process, PIDA provides an agenda of achievable and affordable priority projects aligned with Africa's long-term goals. Simply put, PIDA will be different from previous regional infrastructure integration initiatives because it is designed to bring about effective investments.

4. This report has been prepared on the basis of various study reports (diagnostic, macroeconomic policy perspective, strategic frameworks and programmes) which list is attached as Annex, carried out for the four sectors, Energy, Transport, Transboundary water and Telecommunication/ICT. This report consolidates the outcomes of the work and consultations of all stakeholders and involved parties of the process during 18 months. This report encapsulates what Africa needs to do to capitalize its potential by daring investing in its regional infrastructure. It is submitted to the Eighteenth Ordinary Session of the Assembly of the African Union for adoption.

II. OUTLOOK

5. PIDA assumes that the average economic growth rate for African countries will be 6% a year between 2010 and 2040, driven by a surging population, increasing levels of education and technology absorption.¹ This growth implies that, over the 30 years to 2040, the GDP of African countries will multiply six fold, and the average per capita income will rise above \$10,000 for all countries. This continuing growth and prosperity will swell the demand for infrastructure, already one of the continents greatest impediments to sustainable development. Assuming that this growth is achieved, Africa's infrastructure needs are starkly apparent:

- Power demand will increase from 590 terawatt hours (TWh) in 2010, to more than 3,100 TWh in 2040, corresponding, to an average annual growth rate of nearly 6%.² To keep pace, installed power generation capacity must rise from present levels of 125 gigawatts (GW; comparable with the United Kingdom) to almost 700 GW in 2040;
- Transport volumes will increase 6-8 times, with a particularly strong increase of up to 14 times for some landlocked countries. Port throughput will rise from 265 million tons in 2009, to more than 2 billion tons in 2040;
- Water needs will push some river basins—including the Nile, Niger, Orange and Volta basins—to the ecological brink;
- Information and communications technology (ICT) demand will swell by a factor of 20 before 2020 as Africa catches up with broadband. Demand, around 300 gigabits per second in 2009, will reach 6,000 gigabits per second by 2018.

6. This growing infrastructure demand presents a critical challenge for Africa as it competes in global and regional trade markets that rely on just-in-time production and flexible, speedy and reliable delivery. By just about any measure of infrastructure coverage— whether road density, telephone density, generation capacity or service coverage—African countries are lagging behind. In addition, the AfDB's Private Sector Development Strategy estimates that infrastructure services in Africa cost twice as much on average as those in other developing regions and notes that tariffs are exceptionally high. East Asian firms save close to 70% in transportation costs relative to their African counterparts, while Latin American and South Asian firms save approximately 50%.

7. Closing the infrastructure deficit is vital for economic prosperity and sustainable development. But it is a regional and continental problem that requires a regional and

¹ This growth rate would be similar to India's over the past three decades. Since 2005, the average annual rate of growth in Africa has exceeded 5%.

² According to the International Energy Agency Key World Energy Statistics 2009, demand of 590 TWh approximates that of Germany in 2007, and 3,100 TWh that of China in 2007.

continental solution. Because Africa's economic geography is particularly challenging, and because its infrastructure needs are so great, regional integration is the best, and perhaps only, way for Africa to realize its growth potential and equitably share the benefits of an increasingly connected world marketplace.

III. PIDA's VISION AND IMPACTS

8. The importance of regional integration for supporting Africa's economic development has long been recognized by African leaders, who have consistently expressed their desire to build a common market for goods and services. PIDA's overall strategic objective aims at accelerating the regional integration of the continent and facilitating the creation of African Regional Economic as planned by the Abuja Treaty. By improving access to integrated regional and continental infrastructure networks, PIDA will allow countries to meet forecast demand for infrastructure services and boost their competitiveness by:

- Increasing efficiencies
- Accelerating growth
- Facilitating integration in the world economy
- Improving living standards
- Unleashing intra-African trade.

9. The essential benefits of a regionally integrated approach to infrastructure development are to make possible the formation of large competitive markets in place of small, isolated and inefficient ones—and to lower costs across production sectors. Despite robust GDP gains by many countries in recent years, Africa's staggering infrastructure inefficiencies have been choking integration efforts, stunting growth and sapping national resources, public and private.

10. Part of the problem is that Africa's framework of regional and continental policies is fundamentally sound, but those policies have not been thoroughly and consistently written into national legislation, even after treaties are signed and ratified. And where policies do appear in national legislation, they too often are not enforced. An extensive review of more than two dozen regional projects and development programmes revealed that weak policy alignment and harmonization were the principal drags on efficiency, despite inadequate funding. And in many instances, these inefficiencies are costing Africa billions of dollars—money needed to close the financing gap in infrastructure development.

11. Implementing PIDA will help solve this problem. It will enable African leaders to speak with one voice and reach for common goals. It offers policymakers a list of priorities that address physical infrastructure needs and the soft issues of governance. Most important, PIDA is based on a common vision of regional integration and a long-term agenda that will support the objectives of the Africa Union's (AU) Abuja Treaty. PIDA will enable countries to:

- **Reduce energy costs and increase access.** Africa will reap savings on electricity production costs of \$30 billion a year, or \$850 billion through 2040. Power access will rise from 39% in 2009 to nearly 70% in 2040, providing access to an additional 800 million people.
- **Slash transport costs and boost intra-African trade.** Transport efficiency gains will be at least \$172 billion in the African Regional Transport Integration Network (ARTIN), with the potential for much larger savings as trade corridors open. Steady advances in regional integration and services will finally create a shift from overseas trade to trade between countries and within and across regions, helping fulfil the promise of the 2028 African Common Market.
- **Ensure water and food security.** Africa has the lowest water storage capacity and irrigated agriculture in the world, and about half the continent faces some sort of water stress or water scarcity—and demand is going to surge. To deal with the coming crisis, PIDA will enable the water storage infrastructure needed for food production and trade.
- **Increase global connectivity.** PIDA will boost broadband connectivity by 20 percentage points. Increasing broadband penetration by 10%, which can be expected by 2018, will increase GDP by 1% by strengthening connections between goods and markets and between people and jobs.

12. Trade and competitiveness are not the only considerations when planning Africa's infrastructure future. If Africa won't take its matters in on its own hands, Africa will not be in a position to generate the jobs for its growing population will need. In 2010 Africa had 51 cities with more than a million residents and two (Cairo, Lagos) with more than 10 million. In 2040 it is expected to have more than 100 cities of more than a million residents and at least 7 topping 10 million. Implicit in this surging population forecast³ is the rising number of Africa's workforce. The continent is poised as a manpower reservoir for Africa's economic growth and the world economy—and with PIDA providing the infrastructure base, Africa will have a powerful vehicle for strong, shared and sustainable growth.

IV. DEVELOPMENT OF PROGRAMMES, PROJECTS PRIORITIZATION AND VALIDATION PROCESS

13. PIDA draws on lessons from regions such as Asia, Europe and South America. Its method of establishing priorities for such a large-scale and complex programme relied on an in-depth research and diagnostic review—and on a detailed analysis of needs and gaps in the short, medium and long terms, distinguishing PIDA from what's been tried before.

³ The population of Africa will go from 1 Billion in 2010 to 1.8 billion in 2040. Africa population will then be above that of China in 2025 and India in 2030.

14. The study yielded a macro-outlook for infrastructure demand in each sector through 2040 (or 2020 for ICT), the projected gaps and bottlenecks created by mismatched supply and demand, the institutional inefficiencies previously highlighted and the options for identifying, preparing and funding projects. The programme is organized for the short and medium term (through 2020 and 2030) with a long-term view to meet demand through 2040.

15. Given Africa's urgent infrastructure needs, the projects and programme list for short term implementation is included in the Priority Action Plan (PAP) (**Annex 1**) of PIDA. Although the entire programme can be considered the pipeline for Africa's long-term regional infrastructure development, the PAP details the immediate way forward by presenting actionable projects and programmes that promote sound regional integration between 2012 and 2020.

16. Most important, the PAP represents what makes PIDA unique. The priority project list is the result not only of intense analytical work but also of a thorough extensive consultation process from the outset with the Regional Economic Communities (RECs), the power pools, the lake and river basin organizations, specialized agencies, sector ministers and other relevant development stakeholders. In addition, sector Ministers have been consulted for approval.

17. Projects were prioritized based on three criteria categories: (1) eligibility and regional integration, (2) feasibility and readiness and (3) development impacts. These detailed criteria were discussed and agreed as part of the extensive PIDA consultation process with stakeholders. Projects selected for the PAP have been assessed, selected and ranked based on sub-criteria within each of these three groupings and were validated during the regional consultations, review processes and endorsement from sector ministerial meetings

18. Two-day consultations were held with each REC and the related regional agencies to discuss selection criteria, debate potential projects and reach consensus on programme details. Altogether, more than 300 representatives from African states attended. Sector minister's meetings were held considering and endorsing PIDA outcomes. This broad participation, which led to a continent-wide consensus, laid the foundation for continuing ownership through all phases of implementation. This bottom-up process infused PIDA with specialized quantitative measurements, such as national and regional investment programme details, as well as critical qualitative inputs, such as community desires and preferences.

19. The result is the PAP made up of 51 projects and programmes grouped into a set of general categories, though a number offer cross-sector benefits: 15 energy; 24 transport; 9 transboundary water; 3 ICT. The groupings (**Annex2**)⁴ are:

- **Energy:** hydropower, interconnections, pipelines;
- **Transport:** connectivity, corridor modernization, ports and railways modernization, air transport modernization;
- **Water:** multipurpose dams, capacity building, water transfer;

⁴ Note on Project N°1 on Annex2 : The Grand Ethiopian Renaissance Dam (GERD) is under construction in the Abbay Gorge by the Government of Ethiopia (GoE). The GoE is convinced that the Dam has huge benefit to all the three riparian countries, namely Egypt, Ethiopia and Sudan. Egypt and Sudan have concerns on the impacts of the Dam upon them. To that end, the GoE has invited in good faith the two downstream countries Egypt and Sudan to form an International Panel of Experts to review the design documents of the GERD, provide transparent information sharing and to solicit understanding of the benefits and costs accrued to the three countries and impacts if any of the GERD on the two downstream countries so as to build trust and confidence among all parties.

- **ICT:** capacity building, land interconnection infrastructure, internet exchange points;

20. Projects and programmes under the PAP represent the first batch of agreed priorities resulting from the analysis as per the set up criterias and consultations on the REC master plans. It represents the priority pipeline required to meet the PIDA outcomes. The PAP is not static and will be updated regularly to reflect progress and make way for new priorities as Africa's needs continue to evolve. This reflects the need to ensure coherence with REC master plans and consistency with the PIDA strategic framework. Therefore, the PAP should be viewed not as a single list cast in stone, but as the first (and necessary) step in a dynamic process for delivering the PIDA programme over the next three decades.

21. During the consultations, the particular conditions of island states and fragile countries were acknowledged. The maritime traffic and ports are essential elements in planning the transport corridors linking island states to the mainland and trade routes. The specific regional infrastructure needs of fragile countries are acknowledged and will be continually reflected as PIDA is delivered over the next three decades.

22. Africa is already making significant progress on regional infrastructure through projects such as the Mombasa-Nairobi-Addis Road Corridor, Tema-Ouagadougou-Bamako Road Corridor, Trans-Maghreb Road Corridor (TAH 1), Kazungula Bridge and Bamenda-Enugu Road Corridor. Projects that are ongoing or that have reached financial close are not included

V. PROGRAMME COSTS

23. While it's difficult to accurately project the capital cost of PIDA's long-term implementation through 2040 (currently estimated at more than \$360 billion), the overall capital cost of delivering the PAP from 2012 through 2020 is expected to be nearly \$68 billion or about \$7.5 billion annually for the next nine years.

Sector	Cost (US\$ billion)
Transport	24.4
Energy	40.3
Water	1.7
ICT	0.5
TOTAL	67.9

Total cost of PIDA's PAP by sector and region: \$67.9 billion through 2020

Region	Cost (US\$ billion)
Continental	3.0
North Africa	1.3
West Africa	6.2
Central Africa	21.5
Southern Africa	12.6
East Africa	23.3
TOTAL	67.9

24. Energy and transport projects and programmes represent around 95% of the total cost, demonstrating the critical need for transformative investments in these sectors to support African trade, promote growth and create jobs. The focus in the ICT sector is on enabling environment reforms to promote private sector investment, along with investments to improve broadband connectivity. Fibre-optic investments along power transmission lines, road and railways are included in the energy and transport sector PAP. Many of the large water sector projects and programmes, such as hydropower facilities, are included among the energy sector costs. All projects and programmes in the PAP include accompanying soft measures to unlock the necessary investment requirements.

25. The capital investment required for 2020 is far below 1% of African GDP. And some of the actions have almost no financial cost but require political will and willingness to act.

26. Regional infrastructure will benefit all countries through economies of scale. But some will bear a higher cost than others, and the regional financing differences reflect the scale of investment required in certain countries and regions, such as the optimal development of the Inga site and associated transmission (in the Democratic Republic of the Congo).

VI. FINANCING STRATEGY

27. Under business-as-usual scenarios, funding sources for infrastructure for the PAP could optimistically amount to about \$30 billion by 2020. But business-as-usual only is not an option because PIDA will cost \$68 billion through 2020. How will the gap be closed? Where will the resources come from?

28. Funding will rely on strong and committed national leadership to meet the expected financing gap. According to study estimates, financing expected from domestic sources (public or private) may represent over 50% of total PIDA funding as soon as 2020. The share would grow to about two-thirds in 2030 and as much as 75% in 2040. Official development assistance (ODA) will continue to play an important role, and major actors such as members of the Infrastructure Consortium for Africa (ICA)—which includes G20 countries, the EU-Africa Infrastructure Trust Fund, multilaterals, regional development banks and targeted funds, among other contributors—are called on to continue to increase assistance through 2040. But these ODA resources will not be enough, and they should not be relied on solely for a coherent financing strategy.

29. Countries will have to mobilize their own public and private domestic resources and attract foreign private investment. Private sector commitments to all infrastructures in Africa were nearly \$14 billion in 2010, rebounding to levels last seen in 2008, before the financial crisis. To attract private investment there is a need for countries to ensure a competitive market based on clear legislation with enforcement of commercial law and transparency in procurement. Also needed are more competitive markets and banking systems. The absence of enabling legislation and regulations, a lack of skills and a poor understanding of public-private partnership (PPP) risk management are all bottlenecks currently preventing many countries from fully attract private sector interest, particularly on regional projects. But if put to broader use, PPPs hold the potential for true

transformational impact.

30. In addition to bringing in more private sector funds, Africa's leaders must also embrace new and innovative sources of financing, critical to PIDA's success. Innovative thinking is already at work. In recent years, some African institutions have proven nimble in mobilizing finance to take advantage of the improving macro environment, putting important—and in some cases interrelated—funding instruments in place for development.

- *Infrastructure bonds* are used by many countries today. With them, South Africa finances toll roads, while Kenya has raised nearly US\$1 billion over the last four years to fund road, energy, water and irrigation projects. The Southern Africa Development Community, Common Market for Eastern and Southern Africa and East African Community (Tripartite) is considering issuing regional infrastructure bonds in 2012.
- *Loan guarantees*, which help assure private investors, are crucial to implementing productive PPPs, as shown by the Maputo Development Corridor. When financing one of its toll-road projects, a road between Johannesburg and Maputo, South Africa found equity investors willing to put money in the project, but not without guarantees. Working with the Development Bank of South Africa, the South African government issued subordinated debt to underwrite the risk, giving equity investors the comfort to invest in the first PPP in South Africa.
- At the regional level, the RECs can also play an important role in innovative financing. The Economic Commission for West African States (ECOWAS) has been implementing a 0.25% *community levy* for decades. Most other RECs just rely on ODA funding or member contributions, neither of which is being constantly replenished like the ECOWAS excise tax, which yields a steady revenue stream deposited into the general fund.

31. The scale of the required investments means that all possibilities need to be leveraged, including non-Organisation for Economic Co-operation and Development sources such as Arab Funds, Brazil, China and India. Opportunities for financial innovation, such as climate finance, must be recognized and seized.

32. Regional infrastructure development will not move forward without a sharper focus on project planning and preparation. The volumes of project preparation finance required for PIDA's transformative projects are substantial. The annual expenditures to prepare PIDA PAP projects are expected to be more than \$500 million, assuming that preparation costs average 7% of total investment costs. Preparation costs starting in 2012 will be smaller, at around \$200 million a year, and will build up progressively. A concerted effort is needed to ensure that an adequate volume of project preparation resources is made available from African domestic funding and other sources, such as multilateral development banks and project preparation facilities like the NEPAD Infrastructure Project Preparation Fund.

33. The efficiency of regional project preparation needs to substantially improve. For

most African infrastructure initiatives, regional project preparation funding remains ad hoc, resulting in significant delays or repeated postponement of major projects. African countries and partners need to ensure that project preparation finance is aligned—and if necessary, consolidated—to avoid duplication of products and facilities that will continue to act as a brake on project development and ultimately delivery.

VII. IMPLEMENTATION

34. Implementation will rely on all actors at all levels of the African development process taking coordinated action—AUC and NPCA at the continental level, the RECs at the regional level and, at the national level, the individual countries on whose territory the projects will be constructed and whose populations should benefit from them.

35. The implementation process is grounded in the Institutional Architecture for Infrastructure Development in Africa (IAIDA) (**Annex 3**) which general aim is to reinforce institutional capacities and to create conducive environment for resource mobilization. The architecture consists of structures for decision-making and implementation. Its decision-making component involves several existing actors or bodies with a new innovation in the form of a Council for Infrastructure Development (CID), a non-permanent body, consisting of members of the bureaux of the Specialised Technical Committees of the four sectors. Based on IAIDA, the continental bodies (AUC, NPCA) will be focused on monitoring and advocacy of the implementation process at the continental level. At the project level, implementation progress will be monitored by RECs according to individual sector arrangements. The RECs have a key responsibility in assuring the harmonization and implementation of "soft" policy measures across countries. They will also inform the continental bodies responsible for keeping policymakers and Heads of State and Government informed of overall progress.

36. The responsibility for devising master plans and identifying integrative regional infrastructure lies at the regional and national levels. The responsibility for updating PIDA rests with the NPCA in close cooperation with the RECs and their specialized institutions. This periodic planning exercise will be undertaken at least every five years and include a revised outlook for the future and PAP.

37. As Africa's regional building blocks, RECs are considered the linchpins in planning and monitoring PIDA projects. With their long-term visions and regional interests at heart, they and their agencies are well positioned to plan and monitor the programme. Because the RECs and their agencies lack adequate human and technical capacity to fulfill their role, the Institutional Architecture and other ongoing programmes are helping them to address this challenge. Because RECs are not structured as implementing agencies, it is countries that will have to rely on experienced developers, public or private, to carry out implementation on the ground. It is countries that will drive and own projects. And it is countries that will create the specific structures needed for each project. That is why countries will have to marshal the resources and build the capacity essential for preparing, implementing, operating and maintaining projects. This process will not always be easy, but it is necessary, and it has already proven successful in Africa.

38. Implementing infrastructure is always complex—more so for regional projects with many stakeholders. For PIDA implementation to succeed, coordinated action must be taken all along the project chain, starting with the Heads of State and Government, who must provide political leadership. To that end, it is important to recall the catalytic role of the Presidential Infrastructure Champion Initiative (PCI) which facilitate implementation by removing bottlenecks. Country governments and financial institutions, such as the African Development Bank, must provide financial leadership. Political leadership, as well as financial leadership, is required to avoid the mistakes of past regional infrastructure efforts. At the regional level, RECs and the selected implementing agencies must ensure that countries involved are united and that project developers are skilled.

39. The requirements for different projects in different regions will naturally differ. Given these realities, PIDA's impact will rely on a few key success factors in the implementation process. Notably:

- *Adherence to AU values of subsidiarity and solidarity.* Decisions in a hierarchical system are best taken at the lowest level possible, where accountability should also reside. For PIDA, this means that continental bodies should not undertake actions better handled by the RECs. The RECs in turn will defer to member states on items they are better equipped to handle. The actions at all levels should be complementary;
- *Strong local ownership.* PIDA will avoid previous traps associated with regional infrastructure development, whereby projects ended incomplete or without adequate allocation of responsibility for further work and maintenance. All PIDA projects are aligned with regional priorities and are the result of extensive bottom-up consultation and review;
- *Quick starts and early wins.* Programme sponsors are interested in seeing quick progress on the ground in construction and commissioning of facilities. Several shovel-ready projects that are well advanced are included in the PAP: hydropower generation projects such as Rusumo Falls, Ruzizi III, Kaleta and Sambangalou, transport projects such as Gambia Bridge, and ICT land infrastructure;
- *Shared responsibilities.* PIDA is for all Africans. All Africans, in turn, must support it by whatever means they are capable. Obviously, the greatest weight of this responsibility falls on the shoulders of leaders.

VIII. Conclusion

40. Today, Africa is the least integrated continent in the world, with low levels of intraregional economic exchanges and the smallest share of global trade. Infrastructure inefficiencies are costing tens of billion dollars annually and stunting growth. For Africa to reach its potential there must be a shared commitment by all countries and by all stakeholders to work together on this common agenda and speak with one voice, so that the difficulties in launching and implementing regional infrastructure project can be

addressed.

41. Here is what Africa will look like by 2040 if regional integration is pursued effectively and if all countries and leaders embrace the shared responsibility of PIDA:

- Africa's competitiveness will be established in niche markets and in a growing spectrum of mainstream activities, including agriculture and manufacturing;
- Africa's share of world trade will be much higher, at least twice today's share of 2%;
- Up to 15 million new jobs will be created for the construction, operation and maintenance of PIDA projects, with many more millions created indirectly through the increased economic activity they will enable;
- Intra-African trade share will double from the current levels of 11-12%;
- Water resources and basins will be secured for future generations;
- ICT bandwidth will handle demand swells by a factor of 20;
- Access to electricity will be no less than 60% in any African country, providing access to an additional 800 million people.

42. The positive outcomes are endless: With a robust regional trade system powering advanced international trade, and with sustained economic growth and job creation to meet the demands of a surging population. But it all starts with making the right infrastructure investments, in the right place, at the right time.

43. The programme's ultimate success—and thus Africa's infrastructure future—will depend on Heads of State and Government serving as champions for these projects. Heads of State and Government must set the tone, keep the momentum alive and provide critical national leadership by working together and showing an unwavering commitment to integrated policies, projects and goals. They should create an enabling environment for the private sector, and they should ensure that priority commitments filter down through top executing agencies and ministries. The progress of the Presidential Infrastructure Champion Initiative has shown how involvement at the highest level can move complex regional projects forward by removing barriers to progress.

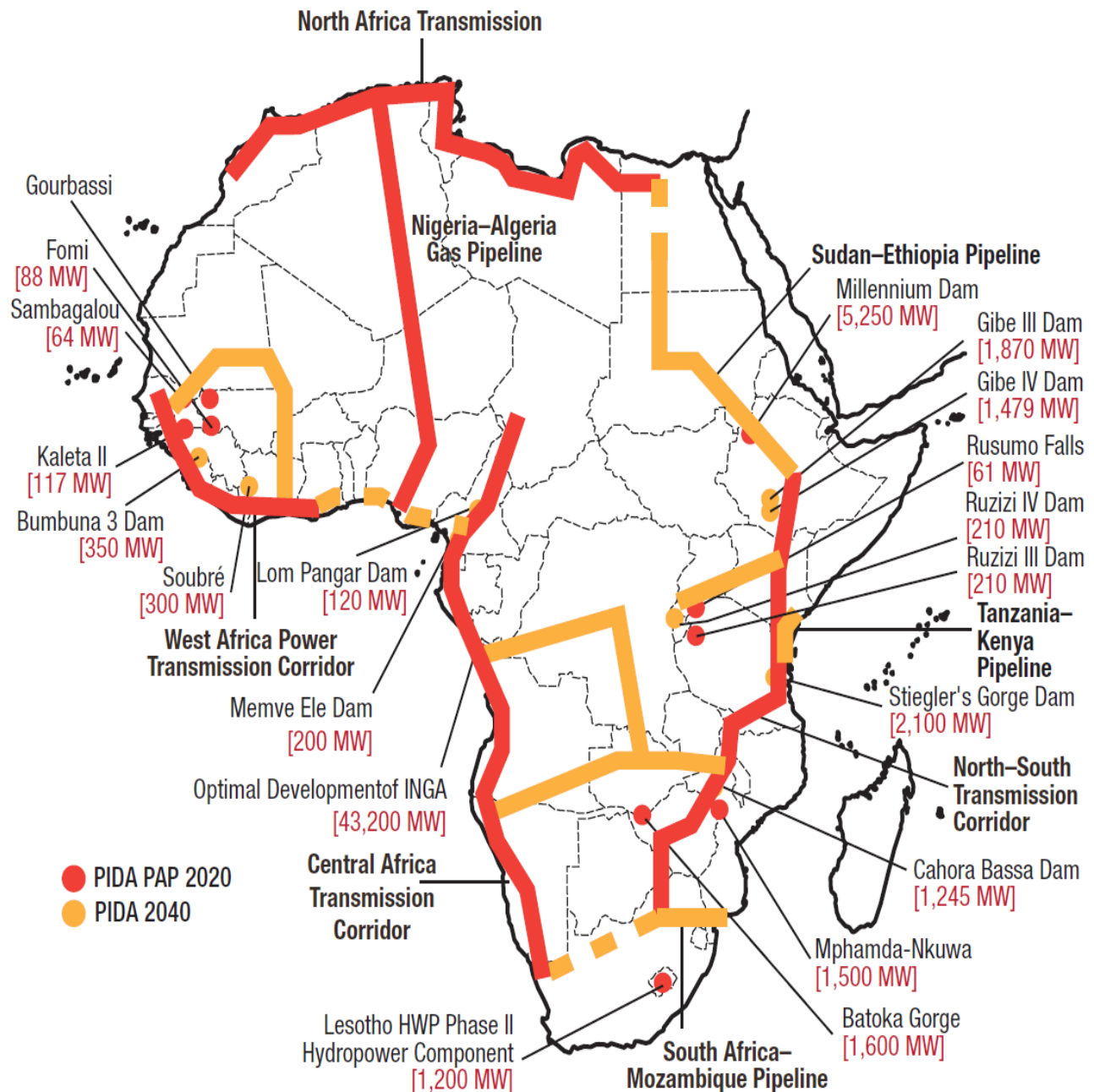
44. Successfully implementing PIDA also means tackling the soft governance issues necessary for true regional integration— harmonization, facilitation, monitoring, and evaluation.

45. For Africa, the issue is not whether countries should pursue a regional integration strategy; there is a political consensus and socioeconomic impetus to do so. The challenge is to implement policies and projects and to create conditions that will result in stronger markets, enhanced trade integration and sustainable growth to benefit the people and nations of Africa. PIDA, as *the* African-owned and African-led programme initiative, is a way to meet that challenge.

ANNEX1: Sector's Infrastructure maps

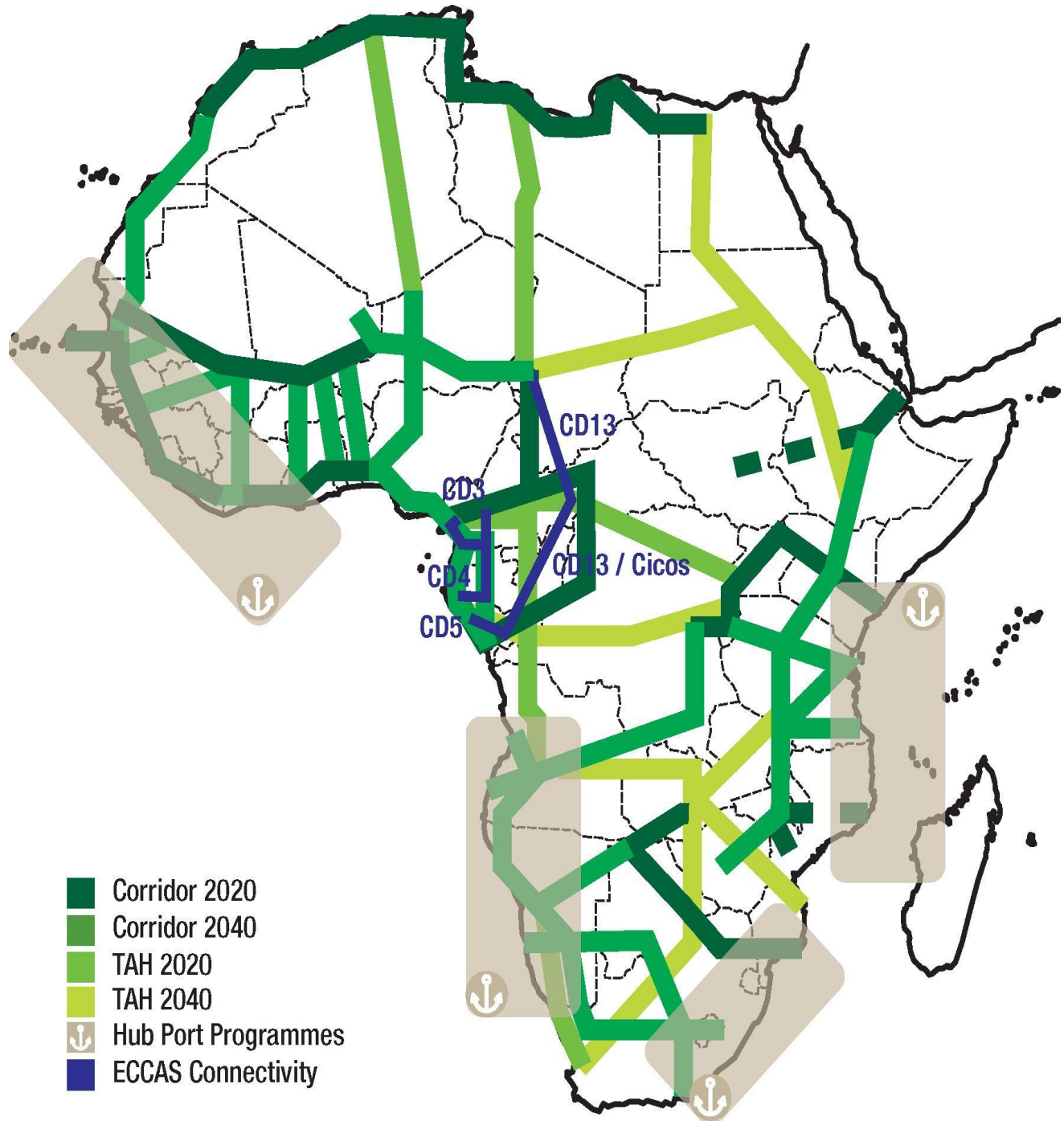
a) PIDA's energy impact

The energy infrastructure programme focuses on major hydroelectric projects and interconnects the power pools to meet the forecast increase in demand. Regional petroleum and gas pipelines are also included.



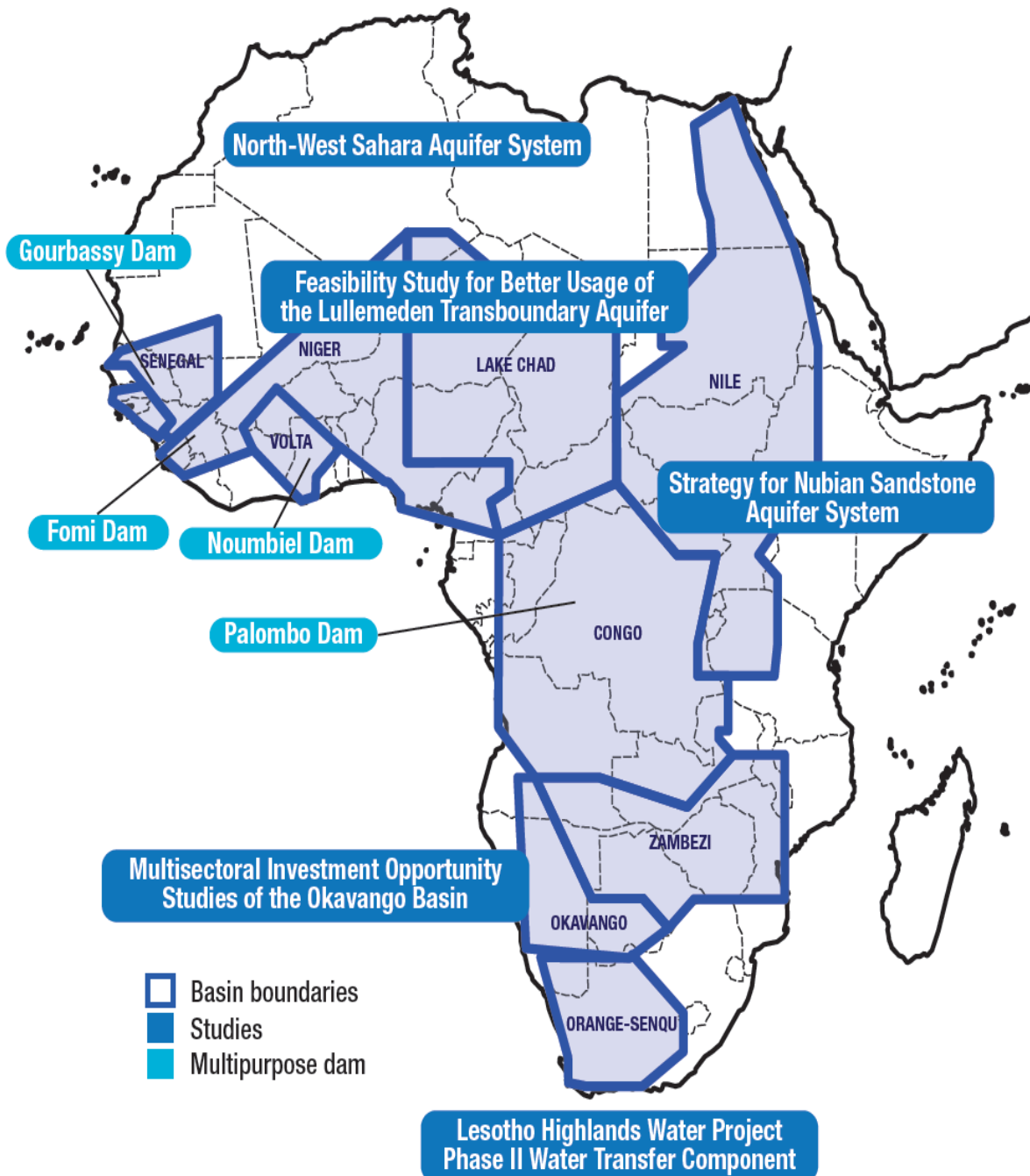
b) PIDA's transport impact

The transport programme links the major production and consumption centres, provides connectivity among the major cities, defines the best hub ports and railway routes and opens the land-locked countries to improved regional and continental trade.



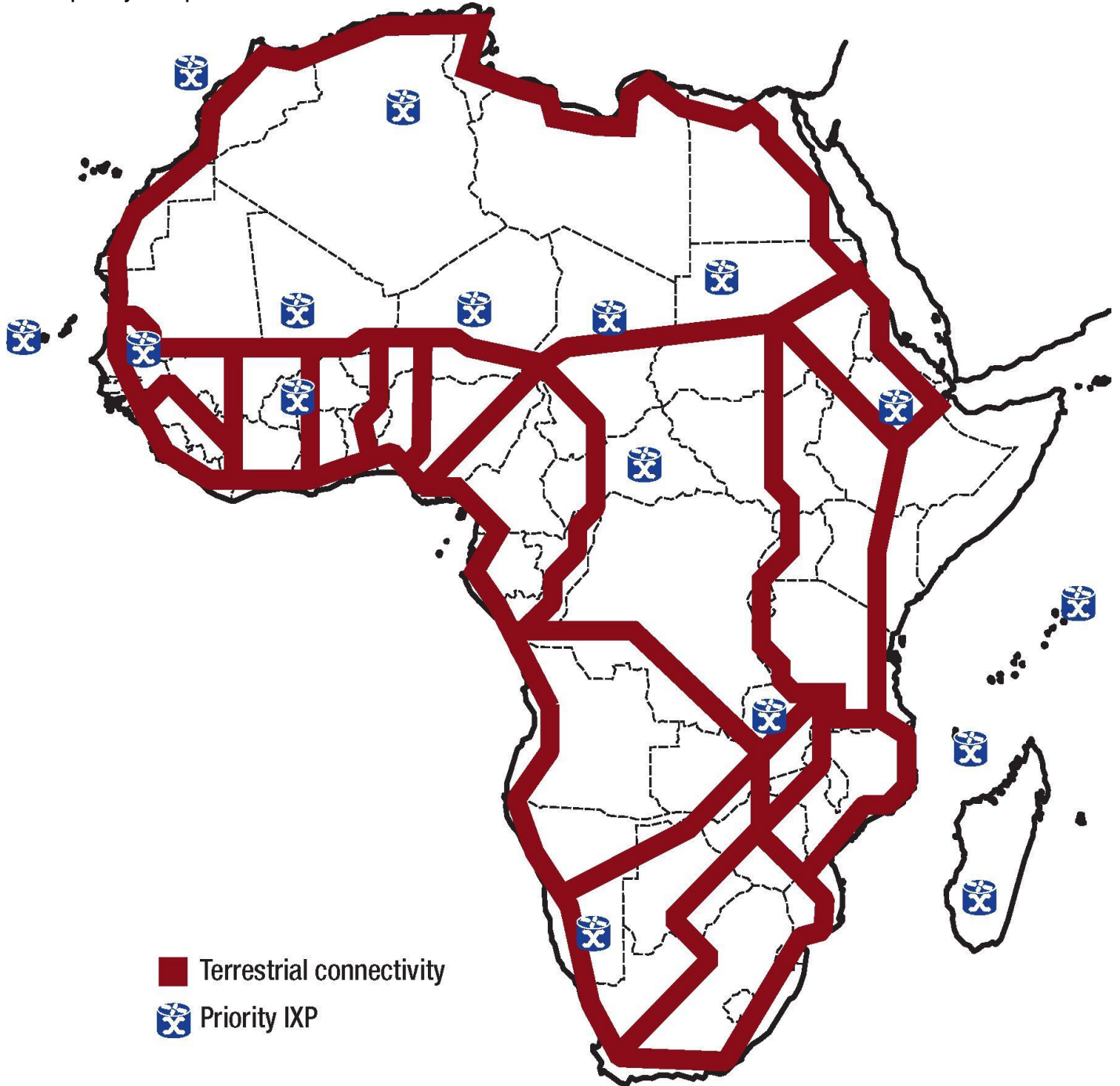
c) PIDA's transboundary water impact

The transboundary water programme targets the development of multipurpose dams and builds the capacity of Africa's lake and river basin organizations so that they can plan and develop hydraulic infrastructure. It would also help address by looming food security deficit.



d) PIDA's ICT impact

The ICT programme will establish an enabling environment for completing the land fibre-optic infrastructure and installing internet exchange points in countries without them. It will connect each country to two different submarine cables to take advantage of the expanded capacity. Map of 2020 Infrastructure



ANNEX 2: PIDA Priority Action Plan: summary tables of sector projects and programmes

Projects and programmes under the PAP represent the first batch of agreed priorities resulting from the analysis, criteria review and consultations on the REC master plans. It represents the priority pipeline required to meet the PIDA outcomes. Projects that are ongoing or that have reached financial close are not included. The PAP is not static and will be updated regularly to reflect progress and make way for new priorities as Africa's needs continue to evolve. This reflects the need to ensure coherence with REC master plans and consistency with the PIDA strategic framework. Therefore, the PAP should be viewed not as a single list cast in stone, but as the first (and necessary) step in a dynamic process for delivering the PIDA programme over the next three decades.

PAP project stages are defined as follows:

- S1 - early concept proposal
- S2 - feasibility/needs assessment
- S3 - programme/project structuring and promotion to obtain financing
- S4 - implementation and operation

a) 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 Interconnection	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
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

b) 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
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, Mozambique	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	840	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	Mozambique, Malawi, Zimbabwe	COMESA/SADC	Eastern
10. Lamu Gateway Development	This programme aims at responding 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, Togo, 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
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-N'djamena 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
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

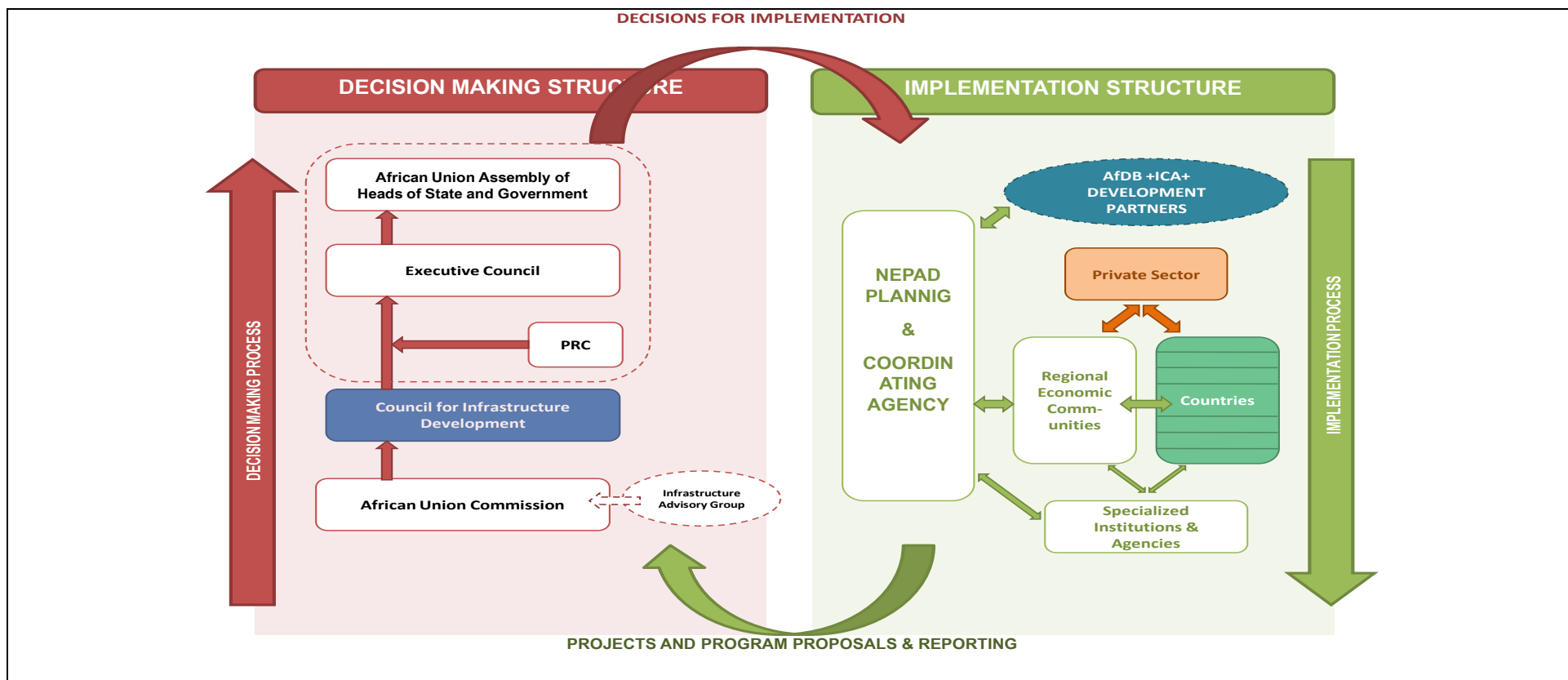
c) PIDA PAP Transboundary Water Sector

Project	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

d) PIDA PAP ICT Sector

Programme	Description	Stage	Cost (US\$ millions)	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

ANNEX 3 Institutional Architecture for Infrastructure Development in Africa (IAIDA) at a Glance



DECISION MAKING STRUCTURE

- i) The decision making mechanism defines organs and institutional arrangements that provide the framework for formulating and implementing policies and ensuring credibility, transparency and predictability of the operations of those organs.
- ii) It comprises the AU Assembly, the Council for Infrastructure Development (CID), the AU Commission and NPCA.
- iii) In the area of infrastructure development, the AU Assembly takes decision on projects/programmes proposals submitted
- iv) The CID's main functions are to review selected projects and ensure coherence and harmonization across sectors, arbitrate and

IMPLEMENTATION STRUCTURE

- a) The implementation mechanism allocates rights and responsibilities to each intervening organ and ensures that all decisions taken on PIDA are timely implemented.
- b) Once the priority projects in the framework of PIDA are endorsed by the AU Assembly, NPCA takes all necessary actions for implementing the decisions of the Assembly and produces ad-hoc and annual report on the state of implementation of AU decisions. AUC and other organs of AU ensure that they address any bottleneck hampering the implementation of AU decision and provide the necessary support and facilitation to NPCA.
- c) The NPCA is in charge of: (i) Facilitating and coordinating the implementation of the continental and regional priority programmes and projects; (ii) Organizing donors

<p>approve priority projects and provide strategic guidance for resource mobilization and technical cooperation. In addition the CID reviews projects/programme implementation report</p>	<p>coordination meeting with RECs, AfDB, Development Partners and prospective Private Sector investors for the funding/financing of the PIDA PAPs; (iii) Signing MoU with RECs, for each PIDA project under implementation; (iv) Producing consolidated ad-hoc and annual reports on status of implementation of PIDA and its priority projects.</p>
<p>v) AUC ensures alignment of selected priority projects and programme with regional and continental strategies and policies framework and reviews strategic plans, studies and reports prepared by NPCA and makes appropriate recommendations to CID.</p> <p>vi) AUC elaborates all policies necessary for creating enabling and conducive environment for PIDA implementation as well as advocacy for resources mobilization. In fulfilling its mandate, the AUC shall be supported by an Infrastructure Advisory Committee (IAC). Its mission is to provide the AUC, advice on technical economic and financial relevance on sectoral infrastructure projects and programmes. This committee is composed of high level experts and directors in charge of infrastructure of RECs and IS. Development banks, private sector and regulators may participate.</p> <p>vii) The NPCA is responsible for the pre-selection of projects. In this regard, NPCA sets appropriate process to coordinate with all existing organs such as RECs, Countries, Development Partners and Specialized Institutions and Agencies, Private Sector to receive their support in the compilation of projects.</p>	<p>d) The Regional Economic Communities and Countries are responsible for direct implementation of PIDA priority projects with the facilitation of NPCA and technical support of Specialized Agencies. RECs will coordinate their actions with regional specialized bodies</p> <p>e) The Specialized Institutions will support the implementation of priority project by providing support to NPCA, RECs and Countries, on project development activities.</p> <p>f) As a key partner in the infrastructure development, the Private Sector will be fully involved in the process of implementation in particular in financing, construction, operation and maintenance of infrastructure.</p> <p>g) The contribution of AfDB and Development Partners is essential in all phases of the project preparation and implementation as well as capacity building and technical assistance to implementing Institutions and Countries.</p>
<p>IAIDA key functions include: Creation of an enabling environment for infrastructure development, Resource mobilization and Management and Networking.</p>	

LIST OF DOCUMENTS PRODUCED DURING PIDA STUDY

Inception Report	5 July 2010
Methodological Brief Macro Transport Energy TWRM ICT	15 September 2010
Phase I report Phase I overview Report on Policies (4 Sectors) Report on infrastructures (4 Sectors) Report on Outlook (4 Sectors) Outline of development programme (4 Sectors) Phase I Annexes	30 March 2011
Africa Sector Outlooks 2040 Macroeconomic Outlook 2040 Africa Transport Outlook 2040 Africa Energy Outlook 2040 Africa TWRM Outlook 2040 Africa ICT Outlook 2040	15 August 2011
Strategic Briefs Transport Sector Brief Energy Sector Brief TWRM Sector Brief ICT Sector Brief	15 June 2011
Phase II Report (Draft Strategic framework & Draft Infrastructure Development Programme & Draft Implementation strategy) Transport Energy TWRM ICT	15 September 2011
Phase III report (Final Strategic framework & Final Infrastructure development programme & Final Implementation strategy) Transport Energy TWRM ICT	15 November 2011
PIDA Study Synthesis	25 November 2011

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