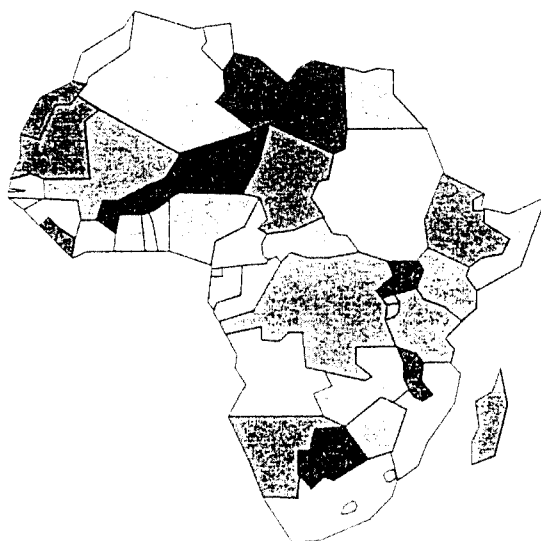


DEFINING PRIORITIES FOR REGIONAL  
INTEGRATION THROUGH INFRASTRUCTURE  
DEVELOPMENT

THIRD AFRICAN DEVELOPMENT FORUM

UNITED NATIONS  
ECONOMIC COMMISSION FOR AFRICA



CONTRIBUTION OF THE WORLD BANK

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“Defining Priorities for Regional Integration”  
Physical Integration through Infrastructure Development  
Contribution by the World Bank

1. INTRODUCTION

1. African Nations have always put regional integration as the center piece of their development agenda, as a way to more effectively overcome the main constraints to development, accelerate growth, and alleviate poverty. This has led to the creation of various sub-regional groupings as stepping-stones towards the economic integration of the continent and as a means to enabling Africa to meet the challenges of competing in the global economy. After a long and checkered history, regional integration has gained new momentum in recent years in all parts of Africa.

2. At the economic level, the over-arching objective of regional integration is to create an open, unified, regional economic space for private operators – a single regional market open to competitive entry and well integrated into the global economy. There are three different and complementary facets: (i) a commercial policy for free goods markets; (ii) arrangements for efficient networks of infrastructure services; and (iii) a favorable environment for business and finance.

3. Concerning infrastructure services, regional integration can contribute to reducing inefficiencies, high costs, and administrative and regulatory obstacles of transport, telecommunications and energy services by expanding their market and their scale of operation, and by establishing a more competitively oriented regional framework. Indeed a network of efficient infrastructure services – not just physical infrastructure – is the material foundation of an open, unified, and regional market.

4. This discussion paper addresses three topical areas:

1. Priorities for infrastructure development as a means to step up pace of regional integration;
2. Regulatory framework and services of supra-national institutions; and
3. Modalities for agreeing, designing, financing, attracting, and implementing regional infrastructure projects.

## 2. PRIORITIES FOR INFRASTRUCTURE DEVELOPMENT AS A MEANS TO STEP UP PACE OF REGIONAL INTEGRATION

5. In almost every dimension of infrastructure development – quantity, quality, cost, and equality of access – Sub-Saharan African countries (with the exception of South Africa) lag behind the rest of the world. Access to infrastructure services is more unequal in Africa than in any other part of the world. Access to electricity is limited to about 20% of the population, and less than half of the population has access to safe water and sanitation services. Although more than 70% of the population live in rural areas, about two-thirds of rural Africa lack access to adequate water supplies, and more than four out of five rural Africans do not have access to electricity and sanitation facilities. In war-affected countries, the situation is even worse. Physical infrastructure stocks – power plants, telecommunications, airports, ports, roads, bridges – are often key targets during war, and suffer from maintenance neglect because required resources are often diverted to military activities.

### Comparison of Regional Infrastructure Indicators

Region	Percentage kg of oil equivalent	Carbon dioxide emissions, 10 <sup>9</sup> mt	Telephone lines per 1000 people (Fixed and mobile)	Paved roads (% of total roads)	Population with access to electricity (percent)	Population with access to safe water (percent)	Population with access to sanitation (percent)
	1998	1997	1999	1997	2000	1995	1995
East Asia and Pacific	357	5076	124	70	60	-	-
Europe and Central Asia	2537	3286	260	83	85	-	-
Latin America and Caribbean	1133	1356	212	25	90	75	63
Middle East and North Africa	1344	1114	100	50	30	-	-
South Asia	445	1201	25	41	60	31	20
Sub-Saharan Africa	700	502	19*	15	20	45	47

Source: World Development Indicators 2001; Can Africa Claim the 21<sup>st</sup> Century: World Bank staff estimates  
\* 1998 data for Sub-Saharan Africa

6. Quality of service provision also tends to be poor: many countries suffer from chronic power shortage leading to industrial production losses; waiting period for telephone connection averages nearly four years; and more than 80% of roads are only in fair condition. Because of poor connections, freight costs are 70% higher in East and West Africa than in developing Asia. The consequences of woefully inadequate infrastructure services are: (a) high production losses and costs; (b) lost opportunities for growth and poverty reduction; and (c) deterioration in quality of people's lives. Poor infrastructure service is one of the main causes of Africa's low competitiveness.

7. Given its inadequate infrastructure and service levels, Africa has not been able to attract significant investment levels. To increase infrastructure access, it is estimated that investment needs to support high growth are in the order of six

percent of GDP. But increased spending alone will not be effective, nor new funds will be arriving, unless efforts are made to improve policies, management of infrastructure, and regional cooperation.

8. Regional cooperation efforts to integrate infrastructure service delivery has the potential to improve infrastructure links between African countries as well as with the rest of the global economy. There are two approaches to regional cooperation: a program approach and a project approach. Examples of the program approach are: the The Transport Protocol for Southern Africa that seeks to harmonize transport policies and procedures in the region; and the Memorandum of Understanding that 23 countries from West and Central Africa have signed in order to implement jointly the Yamoussoukro Decision aimed at liberalizing air transport services in Africa.

9. The Maputo Corridor initiative between Mozambique and South Africa with the blessing of the Southern African Development Community is an example of the project approach. This initiative promotes cross-border cooperation with private sector participation to rehabilitate transport infrastructure such as roads, ports, and rail lines while promoting service and industrial activities along the corridor. Another example of the project approach is the Southern Africa Power Pool that has been formed by electric utilities in the SADC sub-region. Fully operational since April 2001, the SAPP promotes regional planning for coordinated construction of new generation and transmission facilities, and electricity exchange arrangements among member utilities lead to efficient system operation and lower costs for all utilities.

### 3. REGULATORY FRAMEWORK AND SERVICES OF SUPRA-NATIONAL INSTITUTIONS

10. Countries in Sub-Saharan Africa are aware of the potential benefits from regional infrastructure integration. Therefore, while current levels of regional infrastructure connectivity among the countries are low, many of them are considering ways to increase infrastructure network integration and are looking for suitable investments to realize this objective. In pursuing this objective of regional infrastructure integration, government officials in the region recognize the need to address a variety of policy, economic, commercial, financial, technical, social, institutional, and environmental issues.

11. In developing regional infrastructure projects, a variety of policy, regulatory, economic and commercial, financial, technical, institutional, social and environmental issues will need to be addressed.

#### (a) Policy Issues

12. Key policy issues that need consideration include:

- Harmonization of national policies on self-sufficiency (in electricity supply, natural gas, transport, telecommunication, and other network industries) with the regional objectives of infrastructure integration;
- Harmonization of reform policies, most notably issues pertaining to regional infrastructure services, and open access to and use of national network industries (electricity, gas, transport, telecommunications, etc.).

#### (b) Regulatory issues

13. Critical regulatory issues that need to be addressed include:

- Development of independent and transparent regulatory processes and pricing with participation by all major stakeholders;
- Development of model agreements recognizing market forces to support cross-border projects; incorporation of dispute resolution mechanisms, and agreement on environmental issues;
- Harmonization of technical standards and regulatory policies and procedures to facilitate cross-border trade;
- Integration of infrastructure service delivery policies and environmental requirements to support sustainable development; and
- Infrastructure service prices based on economic costs with minimal and transparent subsidies.

**(c) Economic and commercial issues:**

14. Key regulatory issues that need consideration include:
- Access to a package of infrastructure services at prices that balance commercial principles and consumer protection and interests;
  - Policies and regulatory principles for pricing of infrastructure services;
  - Quality of service delivery;
  - Minimum service obligations;
  - Institutional framework for industry and regulatory arrangements.

**(d) Financial Issues**

15. Financial issues that require special consideration include:
- Development of an investment climate conducive to realization of infrastructure developments with a regional focus, e.g. appropriate laws and regulations and currency convertibility;
  - Principles, instruments and procedures for political risk mitigation in developing regional infrastructure projects (to facilitate investment and financing).

**(e) Technical Issues**

16. A number of key technical issues need consideration to realize regional infrastructure integration. For example, the following technical issues need to be addressed:
- Operating procedures for an interconnected system;
  - Appropriate criteria for network expansion planning;
  - Compilation of a regional demand forecast to identify need and timing of network expansion.

**(f) Institutional and Capacity Building Issues**

17. Institutional and capacity building issues of importance to the realization of regional infrastructure integration include:
- Recognition and incorporation (where possible) of best practices and experiences of other regional organizations involved in infrastructure co-operation;
  - Building of appropriate institutional capacity and capabilities at both national and regional level to successfully handle increasing investor

demand, including assessment of training needs and development of appropriate training programs; and

- Formalization of necessary agreements and preparation of appropriate documentation to control and guide the involvement of both governments, public utilities and other future members of regional organizations.

**(g) Environmental Issues**

18. Regional infrastructure integration necessitates the investigation of a number of environmental aspects and implications. These include:

- Project siting through appropriate environmental and social screening practices;
- Multipurpose planning and design; and
- Incorporation of environmentally sound planning principles and practices for regional infrastructure projects.



#### 4. MODALITIES FOR AGREEING, DESIGNING, FINANCING, ATTRACTING, AND IMPLEMENTING REGIONAL INFRASTRUCTURE PROJECTS

##### 4.1. Specific Sectoral Issues

19. In each infrastructure sector, progress in enhancing regional integration will thus depend on (i) appropriate regulatory and policy measures to achieve greater harmonization in infrastructure operations, and (ii) coordinated construction, rehabilitation and maintenance to ensure that physical infrastructure adequately supports regional market integration. The following section examines the situation of each infrastructure sector.

##### 4.1.1. Transport Sector

20. Affordable and reliable transport services for goods and people are now widely recognized as critical factors for the development process in general and for the promotion of national, regional and international trade in particular which significantly contribute to the goal of eradication of poverty. Weak infrastructure, and inappropriate policy environments lead to inefficient transport services that engender high transport costs, which are a major impediment to trade expansion, competitiveness, and hence sustainable development in many developing countries, and especially for land-locked countries. Of the 30 landlocked developing countries worldwide, 15 are in Africa and 12 of them rank as least developed countries (LDCs).

21. African governments are already giving a high priority to the transport sector and are currently formulating and strengthening their policies to attract investment in infrastructure and related services. In this context, private sector participation has an important role in improving the quality of transport and transit services including through a public-private partnership framework.

22. Transit procedures must be coordinated with physical movement to ensure the speedy passage of goods throughout the region. Complex formalities, multiple documentation requirements, and inter-country variation in procedures and documentation are all sources of additional and avoidable costs and inefficiency in transit transport. Facilitation measures, which aim at simplifying, rationalizing and harmonizing procedures, provide a means of improving the quality of transit and of eliminating many avoidable costs in transit systems, particularly indirect transit costs, such as administrative expenses incurred in organizing transit operations, delays in delivery and inventory costs.

23. International conventions, regional, and bilateral agreements ratified by governments are the main vehicles through which harmonization, simplification and standardization of rules and documentation can be achieved. Many land-locked and transit developing countries in Africa have undertaken measures to

strengthen their transit transport cooperative arrangements. The international community has played an important role in supporting the normative law and reform processes but greater financial and technical assistance is required to help land-locked and transit developing countries to effectively implement their cooperative agreements and arrangements.

**24. Road Transport.** Traffic liberalization based on principles of non-discrimination, reciprocity and extra-territorial jurisdiction to regulate cross-border freight movements is an important factor in the quality and cost of regional road transport services. Regional agreements on road transport (e.g. ECOWAS, SADC) generally aim at achieving these objectives, but require effective translation into individual country legislations to become reality. Many countries have by now progressed toward liberalization of their domestic frameworks and the conclusion of bilateral road transport agreements that allow for the transport of goods and people between two countries or in transit to a third country. But the current situation is still far from creating an appropriate environment for developing regional road transport systems along competitive principles.

25. In many aspects of road operations harmonized regulatory and institutional frameworks do not exist or are not being effectively implemented. Among those the following merit particularly urgent attention: road user charges and other levies; cross-border payments; corruption and abuse of authority; the implications of HM/AIDS; lack of uniformity of vehicle dimensions and combinations, and of permissible axle mass loads; widely different and arbitrary standards of inspection for vehicle fitness; significantly different operator licensing and testing requirements and control of cross-border operators; and lack of uniformity of road traffic signs and markings.

26. Border posts operations reflect and magnify the lack of regional harmonization outlined above, and currently are the main constraint to the efficient movement of goods and people across borders. Security is still emphasized to the detriment of efficient transport operations. There is an urgent need for coordination among the various government departments in each country that are involved in border post operations (i.e. transport, immigration, customs, police, justice, health, tourism and environment). In order to increase the efficiency of regional transport, cohesive packages of effective border control procedures are needed to meet the requirements of all departments concerned and be acceptable to both countries involved in each case. The task is all the more daunting that border post management is generally perceived as a sovereign matter which is frequently deemed to require uniform solutions for all border posts of one individual country, regardless of issues affecting particular routes. For these reasons, policy decisions, which have been agreed in principle at regional levels to rectify or improve the situation, have not yet resulted in any significant change.

27. To mitigate the constraining impact of border posts, there is an urgent need to assess the current waste of time and money by the users of main regional transport links and to systematically focus attention on the following impediments: improvement of border post design and services; improvement of on-site management and operation; co-ordination of inspection procedures and encouragement of joint processing; modernization of customs communications technologies and equipment; recruitment of new skilled staff and re-training of existing staff with performance oriented training packages; co-ordination and extension of operating hours; and control and reduction of arbitrariness and corruption.

28. **Road Infrastructure.** Regional priorities for countries should be to both complete the physical infrastructure and improve the maintenance of their national roads pertaining to regional trunk road networks (e.g. the West Africa interstate road network, as defined by the ECOWAS road master plan, or the SADC trunk road network, as defined by the Southern Africa Transport and Communications Integration Study). In Southern and Eastern Africa the main trunk road infrastructure (the regional corridors) is by and large in fair to good condition and adequate to serve both domestic and regional needs. However, throughout most of sub-Saharan Africa, adequate road maintenance is not assured, and even keeping the existing physical infrastructure, including the links of regional importance, in good working condition remains a major challenge.

29. There is a current trend towards quasi-autonomous but accountable national road authorities with the responsibility to manage the roads in many countries in the region. These road authorities have the mandate to raise capital, utilize road funding effectively and promote the involvement of the private sector, local authorities and stakeholders in road management to ensure adequate investments, sometimes through separately-managed road funds. The difficulty facing regional governments is to ensure that the proposed road investments are affordable, and that collection of earmarked revenues (e.g. fuel taxes) and appropriation of other (budgetary) resources are sustainable at the anticipated levels of road usage.

30. It is inconceivable to aim at full cost recovery in the road sector given the external effects involved and the impossibility of an equitable distribution of charges. The main issue is to keep a sustainable level of overall subsidy, which is at the same time justifiable in terms of creating fair inter-modal competition, specifically between road and rail. Due to their independence from day-to-day government operations and budget management, road agencies and road funds offer different ways of organizing public sector responsibilities and support. They are better placed to implement more flexible schemes, such as output or performance-based payments for road maintenance. These are being initiated in other parts of the world, and can provide better incentives for different risk distribution, private bridge financing, and more efficient implementation of works.

31. However, achieving a sustainable level of road maintenance across a sub-region, specifically on the regional trunk roads, would require a level playing field among the concerned countries. Along with technical and safety regulations, harmonization of regional and national road user charges would be needed for the financing and maintenance of current road infrastructure. The level of these charges would need to take into account the fees/taxes paid by carriers in the different countries such as fuel levies, toll charges, transit charges, operator license fees, permits, etc., and the total package should be seen equitable and should avoid double taxation. From a hauler's (or freight forwarder's) perspective, the total costs of the transport movement, are considered in determining the least cost route. Regional inequities will cause traffic diversion, as has been happening in several areas.

32. **Air Transport.** Aviation is critical for Africa to compete in the global economy. It is essential to increase trade, attract investment, grow a tourism industry, and weave together unified and modern society. While the development of civil aviation is partly contingent on the level of income, it remains of paramount importance in Africa, especially for a number of low-density and land-locked countries in Central Africa that may find it the most rapid and suitable means for the transportation of perishable goods.

33. In the past decade, the aviation sector has suffered from the more general problems that have hindered investment in most of sub-Saharan Africa as well as from further features that are idiosyncratic to civil aviation. In particular, state-ownership, poor management and monitoring, and a maze of anti-competitive arrangements have bred corruption, fares, and costs higher than the world norm, poor financial results, and low safety of airlines and airports.

34. African Governments have realized the need to take bold action to create the conditions for an efficient air transport industry through liberalization of air transport services within Africa and to strengthen and harmonize air safety oversight and security in order to comply with internationally accepted standards. It is in that context that the Yamoussoukro Decision was adopted on July 12, 2000 in Lomé by the Conference of Heads of State and Government representing all members of the OAU. The Decision establishes arrangements for the gradual liberalization of both scheduled and non-scheduled intra-Africa air transport services, and takes precedence over all multilateral and bilateral agreements effecting air services between and within signatory States.

35. Improving the institutional and regulatory framework must be a top policy priority and systematic actions need to be taken to make the Decision fully operational. They include, inter-alia: (i) the updating of the legal and institutional frameworks of countries and the revision of bilateral agreements to make them consistent with the Yamoussoukro Decision; (ii) the development of technical regulation and the strengthening of air safety oversight and security; this may require a regional approach for some of the technical functions such as inspection, for which economies of scale can be achieved because of the small

size of the industry in some countries; and (iii) building capacity for the economic regulation of the sector within the region through the establishment of regional economic regulatory bodies for sub-regions, which cooperate with each other. These bodies will play a key role in monitoring the development of the market and anti-competitive behavior. In this context, the Decision taken by Twenty three African Countries from West and Central Africa to implement jointly the Decision is a bold step in that direction, as well as the efforts made by some individual countries to liberalize their national air space and, in some cases, privatize national public airlines.

36. **Ports and Railways.** Unlike in the road sector, most of the railways and major ports in Africa are of eminent regional importance. They will for some time, continue to represent the main regional entry/exit points, and non-road transport routes for goods. However, major investments are not required for new rail lines or new ports. On the other hand, rehabilitation of infrastructure and in some cases, extension of specialized existing facilities, e.g., container terminals and inland container depots, will require significant external funding. The steady decrease of private sector financing over the past years, especially in developing countries, implies the mobilization of public funds to pave the way for public-private partnership in both ports and railways sectors.

37. Many of the current inefficiencies in the ports and railways are attributed to the fact that most of these entities are, or have until recently, been operated as parastatals. Significant improvements are anticipated if these entities are operated on commercial principles with a greater involvement of the private sector in all commercial and industrial dimensions. Therefore, it can be expected that private sector participation, for example through concessions, leases, licenses, and management contracts will result in substantially enhanced efficiency in the provision of rail and port services. In particular efficiency gains can be achieved through: (i) improved financial management based on the application of appropriate cost accounting practices and cost-based tariffs; (ii) cost decreases as a result of staff reductions; (iii) asset disposal and the termination of non-productive services; productivity increases; (iv) more responsive service to regional customers at competitive rates while ensuring reasonable profit margins; (v) improved information systems to facilitate communication and ensure informed decision-making; and (vi) more efficient technical co-operation and marketing on the main corridors to facilitate the provision of a "seamless service".

38. Reform strategies should therefore focus on reducing the role of governments in rail and port operations, increasing the involvement of the private sector in infrastructure financing and operations, and defining the regulatory environment and strengthening the regulatory capacity to oversee the activities of the new operators. In Africa, limited progress, achieved over the recent past through partial reform demonstrates the potential benefits from operational reforms. Some ports (e.g. Maputo, Beira, Dar es Salaam, Walvis Bay in Southern Africa, and Abidjan in West Africa) show the potential of efficiency gains through

concessioning of particular terminals. Considerable cost savings have been achieved through improvements in transit time and reliability by closer co-operation between various railways in Eastern and Southern Africa. Private sector initiatives for rail cargo operations have also made an impact on the efficiency of rail transport in their operating areas.

39. More substantial and long-term reform measures have also been initiated in different countries, specifically in the rail sector. Malawi has restructured and subsequently concessioned its railway system, Mozambique has signed a concession for its northern system and is close to concluding concessions for the southern railway lines and Maputo port, Zimbabwe has concessioned one main rail line from Beitbridge to Bulawayo and developed different concepts for private sector involvement in its total rail system, Zambia is in the process of defining the restructuring and privatization process, in Tanzania, policy decisions by government have opened the way to privatization of Tazara (and Tanzanian National Railways), and restructuring plans for Spoornet in South Africa are being drawn up.

40. West African railways are also in the process of restructuring/concessioning, e.g. on the Côte d'Ivoire-Burkina Faso line or in Cameroon. Côte d'Ivoire and Burkina awarded a joint concession to a private operator in 1995; it is the first railway concession awarded in Africa; after six years of operations, the results are, by-and-large, fully satisfactory. Cameroon has awarded a concession and the concessionaire has taken over operations in April 1999; the concessionaire has had difficulties in closing the loans financing the rehabilitation/modernization program, but operations are satisfactory. Gabon railways is also operated under a concession arrangement since December 1999. A concession has recently been awarded for the Northern railway of Madagascar and the take-over should take place by the end of 2001. A concessioning process has been initiated for the following railways: Senegal/Mali (joint concession), Benin, Congo-Brazzaville and Togo.

41. Private sector involvement in operation and management of rail and port infrastructure is recommended in order to achieve such substantial shifts of responsibilities and economic functions to the private sector, appropriate regulatory frameworks need to be in place and effectively implemented. The following regulatory actions are specifically indicated to promote and facilitate regional co-operation and integration:

**(i) For the railways:**

- Harmonization of technical standards for infrastructure and operational equipment (such as signaling and communication systems);
- Establishment of regional traffic rights for railway operators across borders to enhance competition and minimize delays at border posts;

- Introduction of joint or single inspection points and standardized documentation for border crossings; and
- Standardization of reporting and accounting procedures, as well as performance indicators.

(ii) **For the ports:**

- Harmonization of regional port policy aiming at a shift from "Service Ports" toward "Landlord Port" and adoption of international standards for their performance;
- Promotion of competition in the provision of port services through the licensing of private service providers and the liberalization of port charges (i.e. charges for navigation and pilotage services, the provision of berthing, wharfage, cargo and passenger handling services, ship repair, rental storage and demurrage);
- Encouragement of cooperation between ports to ensure the creation of complementary operations (i.e. the promotion of hub and feeder ports); and
- Development and implementation of uniform port performance indicators based on the UNCTAD model.

#### 4.1.2. Telecommunications Sector

42. Sub-Saharan Africa (SSA) was, up to recent years, marginalized from the fast developments in information and communication technologies and access to telephones, computers and the Internet lags far behind other developing regions. However, in an effort to improve access and service quality of communications, a significant number of SSA governments have embarked on far-reaching sector reforms including: (i) market liberalization, specifically through opening of markets to private cellular services; (ii) privatization of state owned national telephone companies in association with strategic partners; and (iii) revision of the regulatory framework. Countries that were able to implement such comprehensive sector reforms during the past decade are now reaping benefits through increased accessibility and affordability of telecommunications services. Private investment in the telecommunications sector, particularly in the mobile communications services has substantially changed the business structure, as it has also significantly improved the global accessibility to telecommunications services.

43. However, in Sub-Saharan Africa (SSA), the telecommunications sector remains characterized by low service penetration and coverage, high levels of unmet demand and waiting lists, poor service quality, high investment costs and tariffs compared to international average standards. National economies and

markets are fragmented and do not offer the volume and scale economies expected by industry players to operate at low cost. There is a pressing need for more market integration to increase the competitiveness and attractiveness of SSA economies. Unfortunately, until recently, sector reforms were designed on a country by country basis, with no coordination at regional levels, despite the adoption of the African Green Paper in 1994. This lack of coordination explains the continuing disparities that exist between national regulations or sector policies, notwithstanding the recent progress made in many countries.

44. Harmonizing national regulations and implementing market liberalization policies to establish regional single telecommunication markets should be the other principal focus of the future telecommunications strategy. Sectoral decision makers in African countries should increasingly emphasize the emergence of a unified telecommunications market, rather than common physical infrastructure projects. With the perspective to establish such a market, member states, initially of each country grouping, should agree on a harmonization program covering national policies on technical standards, frequency management and control, establishment rules, interconnection and competition policies. This is especially important at the critical junction when national telecommunications companies are being privatized and the telecommunications market liberalized. In a second phase, countries may consider, given the miniscule size of most national markets, to move to a common regional licensing and regulatory agency.

45. In this regard, it is important to note the Decision already taken by the West African Economic and Monetary Union to create a unified and liberalized market by 2006 and the additional steps taken by the ECOWAS to move in the same direction.

#### **4.1.3. Energy Sector**

46. In the energy sector, governments recognize that adequate and reliable energy supply is critical to meeting the social and economic development objectives of their countries. The small energy markets at the national level (for example, over 70% of the Sub-Saharan African countries have power systems with capacity less than 1,000 MW) are too small to alone be the engine of growth. Furthermore, in a large majority of the African countries, only around 10 percent of the population has access to modern commercial energy. Therefore, energy integration, be it through oil/gas pipelines or electricity interconnections, in Sub-Saharan Africa has always been a topic that has drawn strong interest but achievements so far are limited. This situation persists despite the presence of vast and as yet untapped natural gas and hydroelectric resources in the region. The present limited development of national power systems in the African countries also imposes a constraint on the exploitation of these resources at affordable costs at the national level. In recognition of the constraints of their own markets, governments in some parts of Africa have started regional initiatives to



benefit from the advantages of cooperation and coordination at regional levels. The most prominent of these are described below.

47. The Nile Basin Regional Power Forum will be set up in Tanzania by the ten countries that participate in the Nile Basin Initiative. It is designed to (a) foster an enabling environment conducive to increasing power trade in the Nile Basin; (b) create a culture of implementing best practices, practical analytical tools, and enhanced regional power operational planning and co-ordination skills; (c) coordinate their analytical activities with the Nile Basin Water Resources specialists for understanding river system behavior, assessing impacts of multi-purpose hydroelectric power projects, developing and evaluating operational schemes for coordinated river system management, and supporting informed decision making from a regional perspective.

48. The Western Africa Power Pool (WAPP), under the umbrella of ECOWAS will provide a unique opportunity to formalize the development of a regional power market in the western part of Africa, initially between eight countries. This is a region where embryonic interconnections already exist and where some bilateral electricity exchanges are taking place. The initiative is based on the creation of an institutional framework for an interconnected electricity market among national utility companies. The program has three components. The first will focus on reinforcing the physical integration of national power grids, as well as reforming national market policies and regulatory arrangements. The second will pilot a cooperation model for the functioning of the integrated market, including associated transmission and systems control facilities. And the third will be the full scale functioning of the market, with enhanced long-term planning for expansion, and the creation of regional regulatory capacity assuring open access by all operators.

49. The Southern Africa Power Pool (SAPP) has similar objectives, but a stronger starting position as a result of existing high-capacity interconnections between important member countries, including foremost the major producers South Africa and Mozambique. The SAPP, created in 1995, is the first formal international power pool established outside of Europe and North America. It includes the national utilities of all twelve continental countries of SADC, of which, however, three are non-operational members, as they are not interconnected yet. Until recently the SAPP has functioned as a loose pool with formal long-term bilateral contracts between utilities. Gradually the SAPP has moved to a base of bilateral contracts supplemented by a short-term energy market (STEM), the mix of which will be determined by the market conditions. The Coordination Center in Harare, operational since March 2001, has been instrumental to develop the STEM. It will over time assume various functions including administering of contracts, technical oversight of interconnected grid operations, studies for pool members, operator training, and knowledge dissemination.

50. Under the East African Cooperation (EAC) agreement, its three members, Kenya, Tanzania, and Uganda, are developing a power supply master plan for the region and are considering new inter-grid connections to supply power to border towns.

51. Even the active implementation of regional initiatives and, mostly public-sector driven, regional projects is unlikely to create substantial increases in connections and efficiency gains if the energy sector overall, and specifically the power sector, are not subject to far-reaching reforms at the country level. These should aim at transferring management and operations largely to the private sector, and at creating harmonized rules and regulations throughout particular country groupings, and ultimately throughout SSA. However, in most countries, power sector reforms are not yet far advanced, and regional frameworks either do not exist, or are not backed up by sufficient capacity at the regional levels to promote, monitor, and advise member countries on their implementation.

52. The generation of benefits through reforms and regional energy integration initiatives and projects depends upon three critical factors:

- Institutional sustainability at the regional level depends on the ability to articulate and implement the necessary legal and regulatory frameworks that encourage and promote regional integration. Therefore, policy reforms, evaluation and mitigation of cross-border project risks, and developing an enabling environment for private sector-led regional energy provision are some of the critical activities that need to be addressed in this context. In order to ensure sustainability along the above lines, it is essential to create a momentum of ownership, interest and usefulness among the regional partners both with respect to sector reform, and to harmonization on a regional basis. This momentum would best be maintained if regional partners, both governments and private sector sponsors, establish regional fora to address issues related to (a) policy formulation, capacity building, regional regulatory framework harmonization, and (b) business-to-government dialogue for a better understanding of private sector perspectives.
- Technical sustainability of regional energy integration relates to identification of mutually beneficial cross-border projects identified by governments but developed by private-sector sponsors, as well as to smooth and well-regulated cross-border operations/trading. Sustainability in this regard also is a function of the ability of regional governments and private sector sponsors to identify and allocate project risks to the parties that are best able to manage the risks at the lowest cost.
- Market sustainability of regional energy integration projects requires that the energy reform policies are robust and irreversible, including legal and regulatory frameworks that encourage private sector participation, and mitigate political risks. In addition, "standardized" bankable concession arrangements for private-sector led regional investments, and long term

contracts for power purchase/sale transactions (increasingly rare as markets are liberalized) will considerably reduce transaction costs and time.

#### 4.2 Public-Partnerships for Financing Regional Infrastructure

53. A well-designed public-private partnership can contribute to meeting the gaps identified in the provision of infrastructure services. In practical terms, it is the combination of, on the one hand, a policy, legal, and regulatory environment which emphasize fairness, client responsiveness, and transparency, and on the other hand, private sector resources, drive and entrepreneurial talent. It encompasses both the role of the government in establishing the "enabling" environment, and that of the public and private sectors as active partners in the provision of the infrastructure services.

54. Infrastructure financing is highly capital intensive, and investments are usually lumpy with a high proportion of debt financing. Furthermore, in the ongoing sectoral reforms and restructuring, financing is also required to support corporate and financial restructuring, privatizations, and new markets that are opening up in earlier protected sectors. While this climate offers a wealth of new opportunities, considerable risks are also present. Opportunities can be best exploited, and risks minimized, through an active and constructive partnership between the public and the private sector. The private sector needs to be called in; not only for financing, but perhaps more importantly for its expertise and management know-how.

55. At the same time, the public sector must put in place the right policy, legal and regulatory environment. This should ease the risk perceptions that may hinder private investment and, on the other hand, balance private profit seeking behavior with public concerns and interests of all members of society. The increasing role of the private sector is certainly not mirrored by a decreased role for the public sector, rather by a different one. Today, the roles of public and private sectors are changing. Governments recognize that they should not be running corporations, but providing a stimulating environment for private sector growth. Private companies realize the value, both in terms of public relations and profits, of socially responsible projects, and good corporate citizenship to complement their for-profit business. Private companies also accept more the benefits of transparent competitive bidding for contracts.

56. The three key requirements for a sustainable public-private partnership are:

- First, governments must maintain macroeconomic stability and promote appropriate structural policies;
- Second, they must introduce appropriate legal and regulatory frameworks, including competitive mechanisms, property rights and insolvency law;

- Third, and linked to the second point, governments must, through appropriate laws, regulation and through inclusive consultative mechanisms, promote access of the poor. This will enhance the social legitimacy of economic growth, which is an important prerequisite for the sustainability of the growth process.

57. It is in a stable macroeconomic context, supported by a fair, transparent and predictable policy, legal and regulatory environment, that a healthy private sector can thrive. And it is in this context that the complementarities of public and private sectors in the provision of infrastructure and services, can be best taken advantage of. For example, the public sector brings to the partnership its "public good" perspective coupled with its ability to mitigate political risk and regulatory risk. The private sector brings entrepreneurial talent and commercial and financial skills. Moreover, it is also essential that the project structure be simple with clearly defined global and project aims; clear responsibilities and accountabilities; and appropriate apportionment of project risks, with the various risk elements assigned to those parties most capable of shouldering them at the least cost.

58. For infrastructure projects, ideally, the private sector should cover the main commercial risks, including project completion risk, operating cost and market demand. However, the private sector may not be able to absorb the full market risk when it is not given direct access to the market. In such cases, long-term take or pay contracts with government-backed credit-enhancement may be required to bring private sponsors in (for example, purchase agreements for electricity generation). In these partnerships, a fine balance must be struck by the public sector between easing risk perceptions of private sector partners, and maintaining sufficient incentives for the efficient private sector management of projects.

## 5. CONCLUSION

59. African leaders across the continent face the prospect of financing the building of critical infrastructure – power, transport, water, and telecommunication networks – in challenging financial circumstances. They are feeling the squeeze of growing demands for reliable infrastructure services and the attendant high costs of providing such services coupled with increasing constraints on budgetary funding for all types of infrastructure and services. A stark reality is that: the size of the individual infrastructure sector is relatively small and investment level is high, and it is envisaged that economies of scale and scope can be achieved by investigating development of regional infrastructure. This note highlights the fact that while the pursuit of infrastructure integration is indeed a regional priority, there are a host of issues – policy, legal and regulatory, financial, environmental, etc. – that need to be addressed from both a national and regional context to make this regional vision a reality.

## Annex 1

**WORLD BANK ROLE IN REGIONAL ENERGY INTEGRATION**

Africa requires \$18 billion a year in infrastructure financing – about 6% of GDP. Mobilization of this level of financing will require significant improvements in the overall sectoral policy and regulatory framework, high-caliber management, and progress in regional cooperation. With the right policy changes, incentives, and transparent regulations, the private sector can deliver services more efficiently than a state-owned enterprise.

We sketch out below, a possible two-pronged strategy to support regional energy integration through a programmatic approach:

- (i) establish a Forum for Infrastructure Regulation in Africa (FIRA) and the Africa Business Council (ABC) as key priorities; and
- (ii) facilitation of regional cooperation projects to demonstrate regional integration issues and solutions.

**Forum for Infrastructure Regulation in Africa (FIRA)**

The purpose of establishing FIRA is to facilitate effective dialogue on efficient regulation of infrastructure industries, initiate beneficial exchange of knowledge and expertise, and promote rapid implementation of global best practices. The Forum will provide high quality capacity building and training on infrastructure regulation, and stimulate research on network industry regulatory economics. The Forum will also develop partnerships with regional universities, research institutions and enhance links with international regulatory agencies. FIRA activities will be conducted in a host of cities throughout Sub-Saharan Africa.

**Capacity Building and Staff Exchange Programs:** Under the FIRA program, establish a "virtual learning space" (VLS) including a database clearing house for all capacity building programs and expertise in the region, regional universities, private industry, and in public sector; encompassing topics that address regional legal, regulatory, and technical issues related to developing and promoting regional energy integration projects. For example, in the case of developing regional power markets, the VLS will contain examples to analyze the methods for creation of inter-regional power pooling arrangements to avoid shortages, improve efficiency, lower costs, enhance service quality and ensure bulk power system reliability. The VLS will also include examples of regional regulatory policies to facilitate development of cross border pooling agreements as well as enforcement mechanisms.

### Africa Business Council (ABC)

Regional business councils have been established in Asia and Latin America to provide a business perspective on developing practical measures to implement regional energy integration projects. Currently, there are studies sponsored by various regional organizations such as EAC, ECOWAS, SADC that address the scope and potential for establishing regional infrastructure networks. An African Business Council could be comprised of representatives from private sector (regional and international), regional organizations such as EAC, ECOWAS, SADC, etc. and officials from regional government ministries responsible for regional cooperation.

Under the auspices of the Africa Business Council, Regional Roundtables will facilitate meetings and provide a forum for discussion between ministry officials and private sector company executives to learn about and explore investment opportunities in the region. Such Roundtables will also facilitate intensive dialogue with the existing regional organizations such as ECOWAS, SADC, EAC, etc. that are also engaged in promoting regional energy trade.

### Bank Financing Instruments

The Bank has its disposal three instruments to support regional infrastructure projects. These are:

- > IDF grants for capacity building activities for regional trade
- > IDA-partial risk guarantees for private sector-led cross-border infrastructure projects
- > Technical assistance grants from ESMAP and PPIAF for cross-border infrastructure projects

Any one or all three could conceivably be deployed for facilitating development of cross-border regional projects. For example, in the West Africa Gas Pipeline project, a possible role sketched out for the Bank included:

- > **Gas Market Development** –The Bank Group is very well placed to provide support to the Sponsor Countries for development of the domestic markets in the consumer countries (gas transportation and distribution infrastructure, regulatory and pricing regimes, etc).
- > **Project Financing:** The World Bank Group could help with direct equity financing, long term loans (senior, mezzanine, subordinated) including the mobilization of funding for local equity participation, possibly through establishment of an "Equity Funding Trust" from which the shareholding could later be transferred to local investors via domestic capital markets.

Additionally, a financing role for IFC could be discussed with the WAPCO consortium.

- > **Partial Risk Guarantee:** Bank guarantees to mitigate against political risks under the concession agreement and/or the risks under the gas off take agreements in the consumer countries.
- > **Technical Support:** Should the Bank decide to provide financing support or a Partial Risk Guarantee, it would be important to ensure proper handling of environmental and social issues associated with the project – an inevitable role for the Bank.