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**AFRICAN UNION ASSEMBLY  
12<sup>TH</sup> ORDINARY SESSION  
1<sup>ST</sup> – 3<sup>RD</sup> FEBRUARY 2009  
ADDIS ABABA, ETHIOPIA**

**Assembly/AU/9 (XII)**

**INFRASTRUCTURE DEVELOPMENT IN AFRICA:  
TRANSPORT AND ENERGY**

**BACKGROUND DOCUMENT**

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# **INFRASTRUCTURE DEVELOPMENT IN AFRICA: TRANSPORT AND ENERGY**

## **1. INTRODUCTION**

### **1.1 Context**

1. At its Eleventh Session in July 2008, the Summit of the African Heads of State and Government, having considered the roles of water and sanitation in development, dedicated its next session to transport and energy infrastructure development in Africa. This decision reflects the shared concern that the current state of physical infrastructure and services in transport, communications, energy and water in Africa remains inadequate and constitutes a serious impediment to Africa's development and achievement of the internationally agreed Millennium Development Goals (MDGs). In other words, inadequate infrastructure results in reduced service options and quality available to the population, particularly the most vulnerable segments.

2. Transport and energy infrastructure in Africa is grossly inadequate as compared to other regions of the world. Access to electricity averages 38% of the population compared to rates ranging from 70 to 90% for other major geographical zones of the developing world (Asia, Central America and the Caribbean, Middle-East and Latin America). Africa, with 13% of the world's population, consumes only 3% of the world's commercial energy although its share of the world's energy production is 7%. Similarly in transport, road access rate averages 34% compared to 50% for the other geographical zones; road is the most dominant mode accounting for about 90% of passenger and freight transport within Africa compared to around 50% of freight in Europe; rail network coverage is sparse with low interconnectivity; uncompetitive maritime ports; inland waterways not exploited for travel; transport costs are among the highest in the world, with those of landlocked countries accounting for up to 70% of value of exports<sup>1</sup>.

3. The impacts of such deficits on competitiveness in Africa are clear: African countries are among the least competitive in the world. The global competitiveness indices (GCIs), calculated by the World Economic Forum, are lower for Africa than those of other regions of the developing world. Infrastructure appears to be the underlying factor that contributes most significantly to this relatively low competitiveness. A better-interconnected Africa, internally and with the rest of the world, will create larger markets and also help achieve its MDGs. According to some estimates, one percent increase in the infrastructure stock could add one percent to GDP growth.

### **1.2 Continental Infrastructure Development Initiatives**

4. Both the Lagos Plan of Action (1980) and the Abuja Treaty (1991) laid emphasis on infrastructure development. The New Partnership for Africa's Development (NEPAD) initiated by African Head of States in 2002, included an Infrastructure program comprising of Short-term Action Plan (STAP) and Medium-

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<sup>1</sup> "Infrastructure Development and Regional Integration: Problems, Opportunities and Challenges", Joint Note of ADB and UN-ECA, 2006.

Long Term Action Plan (MLTAP), later called Medium to Long-term Strategic Framework (MLTSF), with the objective of promoting the integration of regional infrastructure development. STAP included projects which were already advanced in preparation, had a strong regional integration focus, and could be fast-tracked to implementation. The various Regional Economic Communities (RECs) have taken the responsibility to lead implementation in their respective regions, while the African Development Bank (ADB) coordinates financial and technical support at the continental level, through specific funds and programmes such as NEPAD Infrastructure Consortium for Africa (ICA) and the NEPAD Infrastructure Project Preparation Facility (IPPF).

5. The MLTSF was formulated to provide a strategic framework for the development of infrastructure on the continent based on coherent strategic goals, to define criteria for project selection and to define and institute a monitoring framework to track gaps and progress. In 2005, the African Union Commission (AUC) embarked on a Master Plans and Continental policies initiative aimed at expediting the physical integration of Africa by elaborating sectoral policies and implementing main continental projects and programs.

6. In order to benefit from synergy in the implementation of the infrastructure program, AUC, NEPAD Secretariat and ADB are jointly leading an initiative for the accelerated development of infrastructure by formulating the Programme for Infrastructure Development in Africa (PIDA). The objectives of PIDA are to enable African decision-makers: establish a strategic framework for the development of regional and continental infrastructure based on a development vision, strategic objectives and sector policies; establish an infrastructure development programme articulated around priorities and phases; and prepare an implementation strategy and process including, in particular, a priority action plan in the short-term, as well as medium-term and long-term action plans. In this regard, a coordination mechanism has been established to provide a consultative framework for the different African stakeholders and development partners.

## **2. TRANSPORT SECTOR**

### **2.1 Challenges and Opportunities**

7. Transport is an indispensable element for attaining a single socio-economic space for the free movement of goods, services and persons. It is, hence, a key component of the African Union fundamental strategy of promoting regional integration for achieving the goal of sustainable development of the continent.

8. An effective and efficient transport system is characterised by: physical integration of networks; integrated inter-modal operability; smooth user-service provider interface; convergence of policies; joint planning and development of transport facilities and systems; harmonized standards; sustainable resource mobilisation strategy and compliance with relevant international treaties and conventions.

9. Integration of the transport system may be considered in two dimensions: spatial and modal. With regard to spatial integration, Africa currently lays emphasis on inter-country connectivity. This should link national systems, which serve the

internal needs of each country, to form a complete regional network, opening access to all areas in the interior of each country to the regional economic space. Inter-modal integration would benefit from complementarities and efficiencies of each mode.

10. The current situation in the continent is mostly unsatisfactory: insufficient and low quality infrastructure on the one hand, and inefficient and expensive services on the other hand. In addition, Africa has 15 landlocked and six island countries. The cumbersome administrative procedures and poor facilities within the transit countries are detrimental to the development of their international trade. These problems result in high transport costs in the region. Network connectivity, cost and quality are considered essential to achieve adequate transport efficiency and growth that would lead to the region's desired integration levels.

## **2.2 Strategies and Programmes for Transport Development in Africa**

11. Several initiatives have been taken in the past to develop transport in Africa. An early idea of connecting Cape Town to Cairo was developed in the early 1970s into the Trans-African Highways (TAH) Network Programme. This was subsequently incorporated into the African sponsored United Nations Transport and Communications Decades (UNTACDA) for Africa (1978-1988 and 1991-2000). A complementary initiative to UNTACDA was the Sub-Saharan Africa Transport Policy Programme (SSATP), designed to strengthen the management of transport systems in Africa. In addition, initiatives specific to each sub-sector of transport have also been undertaken: the Yamoussoukro Declaration on a new policy for air transport (1988) and the Yamoussoukro Decision on the Liberalization of Air Transport in Africa (1999); the African Maritime Transport Charter (1994), etc.

12. Transport has constituted the core of all continental and regional development programmes, in particular the Lagos Plan of Action and NEPAD. The RECs have also focused on transport sector development in their programmes. At the international level, African countries also adopted the 2003 United Nations Almaty (Kazakhstan) Programme of Action on transit transport cooperation, with particular concern for the non-coastal developing countries.

13. In 2003, AUC adopted a 2004 – 2007 Strategic Plan on whose basis a Programme for the development of infrastructure called “Linking Africa” was elaborated with a vision of providing the continent with integrated transport and energy infrastructure systems that are reliable, efficient and affordable capable of promoting development and ensuring the participation of the continent in the global economy.

14. Consequently, the African Ministers responsible for transport development took steps to speed up the development of the sector. They held general and mode-specific conferences to consider issues that directly affect the development of the various modes of transport. The First Meeting of the African Union Ministers Responsible for Transport and Infrastructure (Addis Ababa, 2005) considered the important role of transport in poverty alleviation and achievement of the MDGs. They, finally, adopted specific targets and indicators and committed themselves to implementing agreed objectives and strategies to that end.

15. Subsequent Ministerial conferences were held on: railways (Brazzaville, 2006); air transport (Sun City, 2005; Libreville, 2006 and Addis Ababa, 2007); road safety (Accra, 2007); road transport (Durban, 2007); maritime transport (Abuja, 2007) and, lastly, the Conference of African Ministers of Transport (Algiers, 2008). The conferences provided opportunities for the ministers to come up with strategies and guidelines for the elaboration of various plans of action for the development of transport in Africa. The situation in the sub-sectors and the associated issues are briefly outlined hereunder.

## **2.2.1 Roads and Road Transport**

16. Road transport is the most dominant mode in Africa, accounting for between 80-90% of all freight and passenger movements between economic production areas and internal and international markets. Issues concerning this sub-sector were considered comprehensively by the First Conference of African Union Ministers Responsible for Road Transport held in Durban, South Africa (2007) under the theme “For a Reliable, Safe and Affordable Road Transport for the Economic Development and Physical Integration of Africa”. The Ministers adopted the Durban Declaration and Plan of Action for the development of road transport. Specific actions were agreed to improve accessibility, quality and safety.

### **Trans African Highways (TAH) and Missing Links**

17. TAH network was defined in early 1970s as a network of all weather highways of good quality to provide direct links between all Africa’s capitals and major economic production areas to promote integration of African peoples and economies. In all, nine such axes were defined. A TAH Authority and a TAH Bureau were established to supervise and manage the implementation of the programme.

18. The current status of TAH network, according to a study conducted in 2003 by Economic Commission for Africa (ECA) and ADB shows that up to 25% of the network were still not built to agreed standards within and between some countries. Completion of TAH will significantly change the face of the continent, hence, the need to include them in PIDA which is the current expression of the will of African stakeholders to speed up the interconnection of Africa within the framework of NEPAD. The proposed actions to be taken are:

#### **Actions:**

- REC’s have been mandated to facilitate the implementation of the TAH and must, therefore, be strengthened to implement projects for completion of the missing links.
- The AUC should be strengthened to enhance its capacity to co-ordinate, manage and monitor the implementation of the TAH projects.
- Member states should give high priority to projects for the completion of the TAH missing links in their national priority programmes.

## **Road Network Development**

19. Despite increasing traffic volumes, many of Africa's road networks are in poor state of the infrastructure. Construction of new roads to improve access, and rehabilitation and upgrading of existing roads are essential to provide a reliable, safe and efficient transport system both for passenger and freight traffic. This will require new innovative financing and management approaches, which will combine public sector financing and private investment and operations. The proposed actions to be taken are:

### **Actions:**

- Governments need to create enabling environment for private investment in the development of road infrastructure.
- Governments must increase their budget allocations for road network development.

## **Road Maintenance**

20. Maintenance of existing infrastructure remains a major challenge. Road Infrastructure in Africa is generally in a very poor condition and in most cases, this is due to poor maintenance and neglect. Africa's roads often experience a backlog of deferred maintenance resulting in rapid deterioration. To correct this, costly rehabilitation is often required therefore putting an extra burden on the already stretched resources both financial and human. The Road Maintenance Management Initiative (RMI) launched under SSATP ushered in a new approach of cost-effective management of roads clearly delineating ownership, responsibility, cost-recovery, sustainable financing and maintenance. The roads funds created within the framework of RMI continue to play a key role in improving Africa's road network. At least 20 Sub-Saharan Africa countries, about half of the RMI members, have established road funds most of which have put in place independent auditing and transparency measures, and are managed by autonomous boards of directors. The proposed actions to be taken are:

### **Actions:**

- Put in place and implement effective road maintenance management systems to minimise the rapid deterioration of roads.
- Member states should allocate adequate funds for maintenance through, among others, establishment of road funds and other efficient funding mechanisms.

## **Road safety**

21. Africa ranks highest in the world in terms of relative rate of road traffic crashes and fatalities. According to the Global Burden of Disease report, road traffic injuries are among the top five causes of mortality in the 5 - 44 year age group. The economic cost of road traffic crashes and injuries to African countries has been estimated to approach 2 per cent of GNP per annum (US\$10 billion) with a high

foreign currency component for importing medicines, hospital equipment and vehicle spare parts among others. In 2005, African Ministers responsible for Transport and Infrastructure, meeting in Addis Ababa, Ethiopia, adopted a Declaration in which they resolved to reduce road accidents by half by 2015. Subsequently, the African Ministers of Transport and those responsible for Health adopted the Accra Declaration during the African Road Safety Conference held in Accra in February 2007, with specific action plans. The proposed actions to be taken are:

**Actions:**

- Incorporate road safety aspects in design and construction of new roads and identify and correct black spots on the major roads.
- Put in place and/or strengthen structure frameworks for the co-ordination and management for road safety.

**Facilitation of Transit Transport for Non-coastal and Island Countries**

22. There are 15 non-coastal countries in Africa and six island countries. In addition to the long distances their export and import goods traverse to reach the ports, they face several obstacles en route, which result in high costs and low competitiveness in global trade. Such obstacles include delays at border crossings, customs clearing and regular and illegal road blocks. Appropriate measures must be taken to facilitate transit transport, including ratification and implementation of appropriate international conventions on transit transport as stipulated in the Almaty Plan of Action. The proposed actions to be taken are:

**Actions:**

- Ratification and implementation of appropriate international conventions on transit transport as stipulated in the Almaty Plan of Action.
- Implementation of rational and joint management of common one-stop border post systems.
- Establishment of special community funds to support implementation of agreed programmes in the economically weaker countries (e.g. Least Developed Landlocked Countries - LLDC) which otherwise would be unable to implement such projects with own resources (e.g. UEMOA). Appropriate criteria would have to be established for the use of such funds.

**2.2.2 Railways and Rail Transport**

23. Railway transport is the most suited mode for the conveyance of bulky freight over long distances. In that regard, railway transport has a great potential to help minimise the extensive deterioration of road infrastructure in the continent. Africa's railway network totals about 89,000 km for an area of about 29.6 million sq km. This represents a density of about 2.5 km/1,000 sq. km, compared to 40 km/1,000 sq. km for Europe. Sixteen countries do not have railway lines or sections of international lines. The national railway networks are mostly independent of each other except the Eastern and Southern African railway systems, which are interconnected. Other



African interconnected railways systems are those of Burkina Faso - Cote d'Ivoire, Senegal - Mali, and Ethiopia – Djibouti.

24. Moreover, African railway networks are characterised by different gauges (metric and standard) as well as by a host of other divergent technical standards and specifications. This has resulted in the inability of Africa to develop interconnected and interoperable railway systems for most of the continent.

25. Although steps are in progress for privatisation, the rail traffic has been declining for decades due to poor management, old and dilapidated lines and equipment and unfair competition against flexible and privately owned road transport sector. Most African railways have revised their legal status within the framework of liberalization and commercialisation thus paving the way for private sector participation, and concessions have been concluded in a number of countries, albeit with mixed outcomes.

26. The First Conference of African Ministers responsible for Railway Transport System was held in 2006 in Brazzaville, Republic of Congo with the theme "For an Effective Railway Transport System, at the Service of Development and African Integration". The Conference adopted the Brazzaville Declaration and Plan of Action on African Railways. This was followed by the Railway Professional Conference on Interconnection, Interoperability and Complementarity of African Railway Networks held in Johannesburg in 2007 which considered the strategies for harmonizing standards for infrastructure, equipment and operational procedures for African railways. The proposed actions to be taken are:

**Actions:**

- Government to increase investment in programmes for rehabilitation, upgrading and extension of railways for transportation of freight.
- Development and implementation of programmes for replacement of old locomotives, wagons and communication systems.

**2.2.3 Air Transport**

27. Africa's share in global air transport remains modest at about 5.2 % of the passenger traffic and approximately 3.6% for freight in 2004. During the same year, the sector generated 470,000 employment opportunities in the continent resulting into an income estimated at US\$ 11.3 billion (1.7 percent share in the African GDP).

28. The liberalization process, together with globalization, have both created profound changes world-wide in the airline industry. In response, African countries adopted the Yamoussoukro Decision in 1999 for the orderly liberalization of access to air transport markets in Africa. The Decision took precedence over all bilateral and multilateral air transport agreements, which were not in keeping with it, for gradually eliminating all non-physical barriers to intra-African air transport and restrictions linked

to: traffic rights particularly the Fifth Freedom<sup>2</sup>; aircraft capacity of African airlines; tariff regulations; designation of operating instruments; and operation of cargo flights.

29. Full implementation of the Yamoussoukro Decision still remains a challenge to most African countries. The AUC held three ministerial conferences on air transport since 2005, the last one in Addis Ababa in 2007 on the theme: “Achieving a single, safe and secure air space for Africa’s development and integration” as the expression of a real desire by Africans to give a new impetus to the air transport industry on the continent. The conference also elaborated on the future implementation of the Yamoussoukro Decision and adopted the consolidated Plan of Action on African Air Transport (2007-2010).

30. The First Conference of African Ministers of Transport held in Algiers, Algeria, April 2008 updated the Plan of Action adopted in Addis Ababa. The implementation period of this Plan of Action was extended to 2012. In addition, a High Level Meeting of African Airlines was held in Tunis, Tunisia, on 29-30 May 2006. The Meeting came up with recommendations and a Plan of Action aimed at improving the connectivity among African States capitals. The implementation of both Plans of Action will lead to, among others, increasing connectivity in the continent, rehabilitation and upgrading of airports infrastructure and air navigation facilities as well as compliance with international standards and best practices on safety and security. The proposed actions to be taken are:

#### **Actions:**

- Improvement of air navigation facilities by States at national and regional levels.
- compliance by States with international standards on safety and security to avoid the ban of African airlines to operate overseas as well as the failure of African airports to be qualified safe and secure at the global level.
- Full implementation of the Yamoussoukro Decision by all countries and strengthening of AFCAC as the Executing Agency.

#### **2.2.4. Maritime Transport**

##### **Shipping**

31. The most recent estimates, according to the UNCTAD's Maritime Review for 2006, indicate that the volume of goods loaded and unloaded in African ports fluctuate around 860 million tones per year with the share of traffic from Sub-Saharan countries being around a third, namely 300 million tons. Hence the continent accounts for about 6.1 percent of the worldwide cargo, while Sub-Saharan Africa accounts for almost 2.1 percent of that total.

32. There are about 80 major ports/harbours in the region dotted all around the

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<sup>2</sup> The right awarded to one airline to embark and disembark revenue passengers at an airport located in the territory of a country other than the country of registration.

continental coastline and many other specialized port facilities for fishing, tourism, etc. In general, the port dwell time in Africa is high and hourly performance of containers is also relatively high. The latest available data from recent AU-NEPAD studies show an average dwell time in African countries of about 11 days, which is three times that of average ports in other developing regions.

33. The three regional Ports Associations in Africa formed the Pan-African Association for Port Cooperation (PAPC) in 2001 to assist in harmonizing the activities of the existing port management associations in Africa. The issue of port security is given special attention by AU member States owning or operating national ports. The obligation to comply with the adoption of the International Ship and Port Security Facility (ISPS) code, has compelled African port authorities to improve their security installations and procedures including the use of container scanners, in order to avoid being blacklisted as security threats for the global maritime transport industry.

34. The first AU Conference of Ministers responsible for Maritime Transport was held in Abuja, Nigeria, on 22- 23 February 2007 with the main objective of outlining a strategy for the effective revitalization of maritime transport in Africa, as a key component of an African socio-economic development policy". The Ministers adopted the Abuja Declaration and Plan of Action on Maritime Transport in Africa. The proposed actions to be taken are:

**Actions:**

- Development and maintenance of adequate, effective and reliable navigation aids and dissemination of related information.
- Identification and implementation of key port infrastructure development projects and acquisition of adequate port equipment.
- Promotion and development of African shipping lines through.
- Shipping consortia and "slot chartering".
- Creation of dedicated funds for the growth of the African shipping lines.
- Establishment at all levels of common and/or joint marketing networks of shipping agencies within and outside Africa in order to enable African shipping lines to improve on the co-ordination of their schedule and cargo handling operations.
- Establishment of national and regional maritime Cabotage shipping lines encouraged to promote intra-African trade and facilitate the economic and socio-economic integration of the continent.
- Establishment of regional and sub-regional pools for the manufacture and repair of containers.
- Establishment, at continental level, of shipyards that are able to provide quality, durable and efficient service to the maritime industry.

- Promotion of private sector participation in port operations.

## **Multimodal Transport**

35. The biggest development in multimodal transport in Africa during the last few years is the establishment of Inland Container Depots (ICDs) serving landlocked countries. The ICDs have developed rapidly in Africa, particularly in Eastern and Southern Africa, as inland port terminals in coastal or land-locked countries in the hinterland of one or more seaports. The proposed actions to be taken are:

### **Actions:**

- Development of an appropriate regulatory framework.
- Improvement of existing facilitation and transit procedures.
- Construction, rehabilitation and modernization of infrastructure, equipment and transport services.
- Establishment of shipping communities and logistics platforms.

## **2.2.5 Inland Waterways Transport**

36. The rivers and lakes have the potential of providing the African continent with an inexpensive, energy-efficient and environmentally friendly form of transport. Despite this, it remains the weakest link in the transport system despite the excellent possibilities for penetrating the continent's landlocked countries. The main inland waterways are limited to five rivers, namely: Nile, Congo, Niger, Senegal and Zambezi, and three lakes: Victoria, Tanganyika and Malawi. There are also other smaller lakes, such as Lakes Chad, Nasser, Kivu, etc. Overall, 29 African countries, or 54.7%, have one form of navigable waterways or other.

37. Unlike other regions, however, Africa's utilization of inland water transport is not satisfactory. The major constraints to inland waterways transport include: poor safety and security due to lack of communications and search and rescue system; poor port infrastructure at terminals; difficulties arising from seasonal blockages caused by water weeds that often close inland waterways routes and terminals; and lack of modern fleet to provide reliable transport services.

38. In this regard, a number of initiatives have been set in motion by various organizations and institutions over the last decade to improve conditions and environment of the inland water transport. These initiatives represent a new awareness on the possibilities that can be offered by inland waterways in opening up rural access. Their full implementation would definitely assist in identifying bottlenecks to the development of inland waterways and also offer solutions to the development as well as exploitation of the potential use of African rivers and lakes for transport of persons and goods. The proposed actions to be taken are:

**Actions:**

- Establishment of a concerted plan of action for the development of maritime and inland waterways passenger and cargo transport with a view to creating a safer, competitive and sustainable maritime transport.
- Adoption of the IMO Model legislation for the regulation of safety on inland waterways.

**2.2.6 Urban and Rural Transport**

39. While the main focus of the AU strategy has been on connectivity across the continent and its different regions, the need for efficient urban and rural transport cannot be overlooked. Urban transport is an integral part to the inter-country network. The proposed actions to be taken are:

**Actions:**

- Development integrated land use and transport planning policies in urban areas to reduce travel demand.
- Improvement of public transport by providing integrated multi modal services.
- Improvement of infrastructure and accessibility to motorised and non motorised means of transport.

**2.3 Implementation of NEPAD-STAP on Transport**

40. Within the STAP portfolio, the Flagship Projects focused on facilitation measures and on implementation of the Yamoussoukro Decision, but implementation progress has been slow mainly due to delays in legal reform, compliance with Yamoussoukro Decision, and to a limited extent, financial constraints. Facilitation projects experienced delays in adoption of legal, regulatory and operational reforms, lack of financing, inadequate capacity in the RECs and political inaction on compliance. In the same vein, no country is fully compliant with the Yamoussoukro Decision, which should have been completed by 2002.

41. The experiences of Pilot Projects for joint border posts at Malaba (Kenya-Uganda) and Chirundu (Zambia-Zimbabwe) are expected to provide very useful lessons for other planned joint border posts in Africa. The operational aspect is proceeding but finance for the infrastructure and harmonization of legal reform must be speeded up to realize the full benefit of the Pilot Projects.

42. With regard to axle load control, the study is completed and best practices are identified to develop required manuals for use in countries, while implementation awaits the agreement of the member states and associated legal reforms.

43. Coordination among the regional institutions has been encouraging: ECOWAS and UEMOA coordinated action in the area of Facilitation of Road Transit Programme. This is a “best practice” of cooperation between regional institutions to implement projects. Similarly in aviation successful cooperative actions are being

taken by COMESA and SADC, as well as by ECCAS and ECOWAS, although the progress is very slow due to lack of compliance with the Yamoussoukro Decision.

### **3. ENERGY SECTOR**

#### **3.1 Challenges and Opportunities**

44. Energy use is fundamental for economic activities and industrial development but is also closely linked to a range of social issues, including poverty reduction, population growth, urbanization, and opportunities for women. Energy is needed to meet basic human needs and for economic growth. Generally, the quality of life improves with commercial availability and use of energy.

45. In spite of various initiatives and investment made, the development of energy in the continent still lags behind population growth and socio-economic needs. Presently, the situation is characterized by a dramatically low electrification level, low per capita energy consumption, a very high dependency on traditional fuels especially in the Sub-Saharan countries, and persistently low level of energy exchanges among countries. The challenge of Africa is therefore to reverse the prevailing situation by economically harnessing its energy resources to provide affordable energy services to the population and the various economic sectors.

46. Africa is rich in energy potential (hydro, coal, gas, oil, new and renewable, and uranium), to meet its demand. There is, however, imbalance of resources and needs at country level which makes it difficult to economically justify projects for mobilisation of the necessary capital for their development at national level. North and West Africa have the bulk of the oil and gas reserves, whereas Southern Africa holds most of the coal deposits. Vast hydropower potential which is located mainly in Central Africa, Eastern Africa, Western Africa and Southern Africa forms part of Africa's extensive renewable sources of energy. However, most of the energy resources are in those areas far from present demand centres (mainly in Northern Africa and South Africa), often in countries with poor economic conditions and with inadequate infrastructures. Through cooperation, Africa can economically develop its huge energy resources and deliver affordable energy for the socio-development of the continent.

#### **3.2 Strategies and Approach for Africa's Energy Sector Development**

47. The integrated development of the electricity generation resources and sharing them through regional power pooling would promote the development of the continent's energy resources. Initially, the focus will be the completion of power systems interconnections at the regional level in the short-to-medium-term. This will be followed by completion of the inter-regional interconnection via the Grand Inga Hydropower (to be developed in the Democratic Republic of Congo) serving as the integrator of the regional interconnections in the long-term. The completion of the inter-regional interconnection will then strengthen the interconnections with Europe and the Middle East.

48. The West African Gas Pipeline (WAGP) is now completed to supply gas to Benin, Togo and Ghana. It is expected that the Gas Pipeline will be extended to cover other countries in the region. The feasibility study for Trans-Saharan Gas Pipeline (TSGP) (Nigeria-Algeria) is complete. The project will interconnect the North-South

gas networks and thus enabling Nigeria to export its natural gas to the European market through Algeria. It is expected that the pipeline will be tapped to provide gas to the countries located along its route and, in the long run, to other African countries.

49. On the average, the oil energy bill takes over half of export earnings of non-oil producing countries of Africa. Such operation drains the badly needed revenues of countries, which subsequently generate economic dislocation. Mostly, non-oil producing countries import their oil from markets outside the continent. Because of the small volume involved, the cost of procurement of oil at individual country level is high which calls for cooperation among African countries in integrated procurement and utilisation of refineries in order to reduce the cost of oil import.

50. In parallel, appropriate policies and strategies will have to be developed and adopted under the Facilitation Project; and human as well as institutional capacities will have to be built as part of the Capacity Building Project in order to assist in the development and operation of the investment programmes.

### **3.2.1 Oil and Gas Trade and Infrastructure Development**

51. Africa is a major and growing net exporter of oil, natural gas and coal. Africa's oil exports come mainly from a few countries (Nigeria, Algeria, Libya, Angola, Egypt, Sudan, Equatorial Guinea, Gabon, Congo Brazzaville, Chad, and Cameroon). Natural gas exports come mainly from Algeria, Egypt, Nigeria and Libya. Inter-African trade in oil and gas is limited, and could be enhanced through regional cooperation.

52. Problems associated with Africa's domestic petroleum products supplies are basically downstream and the performance of oil refineries contributes the major share to the problem. Broadly speaking, most African refineries are inefficient and poorly managed, small and suffer from diseconomies of scale. The refining production mix is sub-optimal considering the product demand structure and the capacity utilization is the lowest by global standards. A major challenge in this regard is how to undertake a major restructuring and investment that is needed in the refining and product distribution to make the industry more competitive globally. A modernized downstream sector that adds much value to the large amount of crude oil produced in the continent would be the only way for the maximization of return from exploitation of oil resources, which requires regional cooperation for integrated utilization of refineries.

53. Gas flaring causes global, regional and local environmental problems and constitutes the waste of a non-renewable resource. This takes place for lack of local markets and vision to link into regional and international markets. About 89 percent of worldwide gas flaring is in developing countries, of which 25 percent is flared in Sub-Saharan Africa<sup>3</sup>. The gas flaring in the North Region is relatively negligible because of proximity of the source to market (regional, European and Middle East) and well developed gas distribution networks. Flared gas is a relatively cheap natural resource

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<sup>3</sup> World Bank: Gas Flaring in Africa: Challenges and Opportunities, NEPAD Work in Progress Review Workshop, Benoni, January 2002.

that could be captured and used to generate electricity and thus reducing the cost of electricity, thereby increasing Africa's competitiveness and supporting economic opportunities for the continent. Considering that gas flaring would have negative impact on environment, linking the reduction in gas flaring with international climate change treaties would facilitate mobilization of funding for the development of the necessary infrastructure for capturing and utilization of the flared gas.

54. Seven African countries are partners in the World Bank-led "Global Gas Flaring Reduction Partnership (GGFR)" which seeks to improve energy efficiency by promoting better use of wasted gas. These are: Algeria, Angola, Cameroon, Chad, Equatorial Guinea, Gabon, and Nigeria. Nigeria had committed to end gas flaring by 31 December 2008. This measure together with the development of infrastructure to transport the gas to the demand centre would promote the sustainable utilization of the gas. Furthermore, considering the negative environmental impact of gas flaring, linking the gas reduction in gas with international climate change treaties would facilitate mobilization of funding for utilization of the flared gas.

55. Recognizing shortcomings in downstream activities of the oil sector, the Declaration adopted and Action Plan drawn at the First AU Conference of Ministers Responsible for Hydrocarbon (Oil and Gas) in Cairo, Egypt (11-14 December 2006) called for setting up regional storage and distribution facilities to reduce the inefficiencies in the petroleum product procurement and distribution. In line with the declaration, related to operationalization of the African Petroleum Fund (APF), the study for establishment of AFP is now complete. The operationalization of APF, which is intended to mitigate the effects of the increase in oil prices on African countries, will be a significant action in the direction of regional cooperation in the oil and gas sector. Towards the development and efficient utilization of the oil and gas resources, and promoting cooperation in the sector the following actions are proposed.

#### **Actions:**

- Establish a strategic framework for cooperation in regional oil procurement, utilization of refineries, storage and distribution facilities.
- Establish a framework for infrastructure development to capture and distribute the flared gas to African countries and export.
- Expedite the development of the Trans Saharan Gas Pipeline (TSGP) (Nigeria-Algeria Gas Pipeline) that would export Nigerian gas to Europe and eventually serve as a backbone gas network to further extend gas supply to the surrounding African countries.
- Expedite the operationalization of the West African Gas Pipeline.
- Expedite the operationalization of African Petroleum Fund.

### **3.2.2 Electricity Sub-sector Infrastructure Development**

56. Africa has abundant resources for the generation of electricity. These include hydropower, coal, oil, gas, uranium as well as new and renewable sources. The continent has not been able to substantially exploit the resources because of high cost involved and lack of investment.



## **Hydropower Development**

57. Africa has huge and largely untapped hydropower potential (estimated over 1100 Terawatt-hour/annum) mostly located in the Congo (Central Region), Nile (Eastern Region) and Zambezi (Southern Region) and Niger (Western Region) river basins. Only 7 percent of this potential has been developed to-date. Spilling water from dams and/or not harnessing hydro resources for lack of adequate demand are similar to gas flaring: the waste of low-cost and abundant energy sources.

58. Along with the development of hydropower stations, interconnection networks will be required to transport the generated power to the demand centres. It is envisaged that the regional interconnections will be completed in the medium-term and inter-regional interconnection completion in the long-term with the development of Grand Inga in the Democratic Republic of Congo (DRC) serving as the major integrator of the regions. A program for integrated development of hydro resources and interconnections would minimize transaction costs and therefore attract investment and promote energy security. Recognizing this, the First Conference of African Ministers Responsible for Electrical Energy (held in Addis Ababa, Ethiopia, on 20-24 March 2006) adopted a Declaration in which the Ministers committed themselves to support the integrated development of the continent's hydropower potential. To this end, the Ministers decided to establish a Coordination Commission for the development of major integrating hydropower projects. Towards the integrated development of hydropower resources and power pooling the following actions are proposed.

### **Actions:**

- Countries commit themselves to cooperatively develop the hydropower and interconnection projects identified in NEPAD-STAP investment program.
- AUC-NEPAD facilitates mobilization of finance for hydropower and interconnection projects identified in NEAD-STAP investment program.
- Expedite the establishment of the "Coordination Commission for the development of major integrating hydropower projects". The studies are being finalized by the AUC taking into account recommendations made during the validation workshop (held in Addis Ababa, Ethiopia, on 26-28 November 2008).
- Expedite the interconnection of regional power pools into a continental network.
- Expedite the integrated development of the major hydropower potential located at four poles of the continent: Congo, Niger, Zambezi and Nile river basins.

### **Coal Power Plant**

59. The contribution of coal in the energy balance is, and will continue to be, important to Southern Africa. Furthermore, power generation from coal will continue to

assist in this region to counter balance the hydrological uncertainty of the hydro base generation. It is, however, necessary to introduce clean coal technology in the coal utilisation cycle to mitigate environmental impacts. The coal power generation will broaden the energy mix, thus enhancing the continent's energy security, when the SAPP is extended to the other regions.

### **Nuclear Power Plant**

60. Presently, it is only the Republic of South Africa in the continent that uses nuclear energy for electricity generation. In addition, countries like Egypt, Algeria and Nigeria have embarked on a program to use nuclear energy for electricity generation. With the pressing factors such as the growing demands for electricity supplies, global warming, and increased safety of new nuclear technologies, appeared to be pushing the risk-benefit balance into the nuclear's favor and therefore several other countries are leaning toward the use of this technology for their future power generation.

61. Before going nuclear, however, considering the complexity and low level of dissemination of nuclear technology in the continent, cost of nuclear technologies and risks, and given the other options available to the continent to meet its energy requirements, African countries need to carefully assess their available indigenous energy resources and consider trade-offs on the feasibility of available energy resources suitable for bulk power generation against nuclear option. In the meantime, African countries need to build institutional capacity in nuclear field in order to equip themselves with the technology to develop nuclear power generation when it becomes feasible. The proposed action to be taken is:

#### **Action:**

- Build institutional capacity and research & development in nuclear field.

### **New and Renewable Sources of Energy**

62. Africa has abundant new and renewable sources of energy in particular solar, wind and geothermal. These sources of energy have environmental advantages. However, the continent has not been able to substantially exploit the resources because of high cost of the associated technologies. To address this issue requires regional cooperation in manufacturing and marketing of equipments. The manufacturing and marketing of New and Renewable Sources of Energy (NRSE) technologies in the regional context would create economies of scale thereby making NRSEs cost of supply affordable and enhance their development.

63. The geothermal potential of Africa is estimated at 14,000 MW. Presently, the exploitation of geothermal resource is mainly in Kenya with 127 MW installed capacity and it generates about 17 percent of national power supply from geothermal power plants and in Ethiopia with 7 MW installation. The two ~~four~~ countries in Africa with significant power generation from wind farms are Egypt (375 MW), Morocco (240 MW), and wind farms in Tunisia (120 MW) and South Africa (120 MW) are under construction. The common use of solar energy is for water heating and drying. Electric power generation from solar sources using photo-voltaic is limited to small-scale applications because of the high cost of the technologies. However, Egypt and

Morocco are in the process of developing two solar-thermal power plant each (150 MW) with 30 MW generation from solar.

64. An International Conference on Renewable Energy in Africa jointly organized by the Government of Senegal, AUC, United Nations Industrial Development Organization (UNIDO) and Germany was held in Dakar on 16-18 April 2008. The conference, under the theme “Making Renewable Energy Markets Work for Africa”, deliberated on the policies, industries and finance for scaling up the development of renewable energies in Africa. The conference adopted a Declaration wherein it was anticipated to raise US\$ 10 billion for renewable development during 2009-2014; and Plan of Action and Monitoring Mechanism was drawn for creating enabling environment for investment and mobilizing resources for the program. To lead the implementation of the Plan of Action, the conference recommended for the AUC, in partnership with UNIDO and other relevant partners, to draw on existing mechanism to establish a high level policy advocacy group at ministerial level. Towards promoting the development of new and renewable sources of energy the following actions are proposed.

#### **Actions:**

- Promote the establishment of NRSEs equipment manufacturing facilities in the regional context to make NRSEs cost of supply affordable.
- Establish a high level policy advocacy group at ministerial level to lead the implementation of the Plan of Action specified in the Dakar Conference Declaration.
- Implement the Dakar Conference Declaration and Plan of Action.

#### **3.2.3 Bio-fuel**

65 Considering that imported oil consume much of the foreign exchange earnings of non-oil producing countries, Africa has renewed the interest in finding alternative sustainable fuel such as biofuels to augment energy security avert the associated environmental issues. Africa has vast land, varieties of biofuel feedstock, favourable climate for growing energy crops and low labour cost to take advantage of this emerging industry. Harnessing this labour intensive biofuel potential would create employment and reduce the cost of importing oil and thus lifting African countries from the poverty trap. The total biofuel production in Africa is relatively small with mainly South Africa, Zimbabwe, Egypt, Malawi and Democratic Republic of Congo exporting ethanol to the European Union<sup>4</sup>. Some African countries have started to blend petroleum product with ethanol to reduce their petroleum consumption.

66. A Seminar on “Sustainable Biofuels Development in Africa: Opportunities and Challenges” was held in Addis Ababa, Ethiopia, on 30 July - 1 August 2007 in order to discuss the potentials and challenges of biofuel. The Seminar was organized by the

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<sup>4</sup> Background Paper on Biofuels Industry Development in Africa: AU/Brazil/UNIDO High Level Seminar on Biofuel in Africa, Addis Ababa, Ethiopia, 30 July-01 August 2007.

AUC in co-operation with the Government of Brazil and UNIDO at the African Union Commission Headquarters. The seminar reached agreement on the following recommendations: (a) development of enabling policy and regulatory frameworks for biofuel development, and (b) commitment to include biofuels in the broad energy related frameworks.

### **3.2.4 Access to Affordable Energy Services**

67. Dependence on traditional fuels will long remain a reality. It is not so much their use that is wrong, but the unsustainable manner in which they are being managed and used. Given the extent of wood-fuel use in Africa, one critical element of a more appropriate energy mix for Africa is more sustainable biomass use. Commercial energy supplies would not only contribute towards the biomass sustainability problem, but also reduce the burden of fuel-wood collection and provide the health benefits of reduced indoor air pollution. It also allows women to allocate the time they would have used in inefficient collection of energy resources in more productive arena such as education.

68. In Africa, access to electricity averages 38% compared to average rates of 70% to 90% for the other developing regions of the world, which presents a generally poor picture. The average per capita energy consumption has been consistently far lower than the world average as well. Hence, the important objectives of Africa's regional integration efforts thus need to be the increasing of African electrification level and energy consumption per capita.

69. In many countries rural electrification by means of grids and the sole intervention of electricity utilities is not the best or fastest means of providing the largest number of households with electricity. It is clear that NRSE technologies must play an increasingly important role in the 21<sup>st</sup> century in fully harnessing Africa's extensive NRSE potential, as providing clean, affordable, and reliable energy is a key element towards sustainable development. Through regional cooperation (production of cheap energy, cross border electrification, manufacturing of equipment, etc) the cost of supply would be reduced resulting in the delivery of affordable modern energy to rural communities. Recognizing this, the First Conference of African Ministers Responsible for Electrical Energy (held in Addis Ababa, Ethiopia, 20-24 March 2006) adopted a Declaration in which the Ministers decided to establish an African Electricity Fund designed specifically to finance rural electrification. The following actions are proposed towards promoting supply of affordable commercial energy and sustainable utilization of biomass.

#### **Actions:**

- Expedite the establishment of African Rural Electrification Fund.
- Support cross-border electrification, in addition to grid to grid interconnections.
- Support exchange of good practices in the management of biomass resource and efficient end use technologies.

### 3.2.5 Energy Efficiency and Reliability of Energy Supply

70. In the past, African energy intensity, which is measured in terms of commercial energy consumption per dollar of GDP, has increased whilst there has been a decline of world average energy intensity. Energy supply and end-use efficiencies are still only two-thirds to one-half of what would be considered best practice in the developed world. Therefore, the direction of energy systems and energy policies must be shifted towards greater emphasis on end-use efficiency, renewable energies and low-emission technologies. Cooperation with developed countries and international institutions regarding energy efficiency will assist African countries to develop capabilities and expertise for implementing sustainable least cost energy development. Regional and non-regional cooperation, through exchange of good practices and development of expertise, would improve the inefficient utilization of the continent's energy resources. The following actions are proposed towards promoting energy efficiency and reliability of supply.

#### **Actions:**

- Diversification of the energy mix including energy efficiency as well as promoting and developing biofuels.
- AFREC to collect and disseminate good practices on energy efficiency and reliability of supply.

### 3.3 Implementation of NEPAD-STAP

71. **Studies:** NEPAD-STAP studies included: Grand Inga (Hydropower) Integrator, DRCANSA (WestCor) interconnector, Nigeria-Algeria Gas Pipeline, regional studies for completing the missing interconnections. Except for two countries (Somalia and Eritrea), the interconnection studies for Eastern Region are complete. In the Western Region, the interconnection studies are either complete or their implementation is in progress. In the Southern Region, the preparation of the only planned interconnection study (WestCor) is complete except the study of the power plant (Inga III) which is planned to feed the Interconnector. In the Central Region, a Master Plan has been prepared for the interconnection of the regional countries. However, feasibility study of each specific interconnection will have to be prepared for sourcing of financing for the projects. The feasibility study of Nigeria-Algeria Gas Pipeline has been completed while the feasibility study of Grand Inga Integrator is ongoing.

72. **Physical Projects:** NEPAD-STAP included one hydropower project, eight power system interconnection projects, three gas/oil interconnection projects, physical projects. Among those physical projects proposed for NEPAD-STAP, the construction of West African Gas Pipeline, Nigeria-Benin and Algeria-Morocco-Spain (Strengthening) interconnections are completed. The implementation of Ethiopia-Sudan interconnection, Ghana-Togo-Benin (Strengthening) interconnections and Kenya-Uganda Oil Pipeline is ongoing. However, the implementation of Ghana-Burkina Faso, Cote D'Ivoire-Mali and Algeria-Spain interconnection projects has not been realized. The implementation of Mpanda Uncua Hydropower Plant in Mozambique and Mozambique-Malawi Interconnection could not be realized mainly because of delays in conclusion of the Cooperation Agreements. The feasibility study

Tunisia-Libya Gas Pipeline has been completed and discussions with prospective financiers are underway to secure financing for the project.

**73. Capacity Building and Facilitation Projects:** The capacity project was intended to operationalize and strengthen AFREC and build capacity in the sub-regional organizations to provide technical support to the sub-regional organizations to strengthen their capacity in the formulation and implementation of regional policy, as well as strategy formulation, preparation and implementation of regional programs. The Facilitation Project was intended to promote cooperation among African countries, development partners and the private sector for energy infrastructure development. The Capacity Building projects proposed under NEPAD-STAP were to be implemented by RECs and AFREC. The RECs implemented most of their respective capacity building projects. However, as ratification of AFREC's Convention took so long, AFREC lacked the legal status and human resources to fully engage with cooperating partners and financial institutions to outsource funds for the implement its activities. Therefore, the capacity building and facilitation projects, which were earmarked for implementation by AFREC, were not fully realized.

#### **4. INFRASTRUCTURE FINANCE IN AFRICA: TRENDS AND PROSPECTS**

##### **4.1. Africa's Infrastructure Financing Needs**

74. A report from the World Bank-supported African Infrastructure Country Diagnostics (AICD) study in 2008 virtually doubles the investment needs in Africa to US\$40 billion per year, with maintenance and operating costs requiring a further US\$40 billion per year. The energy and transport sectors account, respectively, for US\$23 billion and US\$11 billion in capital investment, and US\$19 billion and US\$11 billion in operating and maintenance expenditures.

75. These are indeed modest amounts compared to similar investments in some key emerging economies around the world. For instance, in 2007 Brazil launched a four year plan worth US\$300 billion to modernize roads, power plants and ports. Similarly, India plans to spend around US\$500 billion over the next five years.

##### **4.2. Sources of Finance for Africa's Infrastructure**

76. There are five main sources of infrastructure finance in Africa: public budget; Official Development Assistance (ODA) from OECD partners on bilateral basis; loans (concessional, non-concessional) and grants from international and regional financial institutions (World Bank, ADB, etc.); official loans from non-OECD financiers (including the Ex-Im Banks of China and India); and equity contribution from private sector.

77. The importance of the different sources of finance varies according to the infrastructure sector in question. Private finance is the predominant source of funding for telecommunications. Public budgets, supplemented by ODA, are the main sources of funding for transport and water. The power sector draws primarily on public budgets and on non-OECD finance, with only a relatively small share coming from ODA or private finance.

78. Progress has been made on bridging the financing gap. As recently as 2002, external finance for African infrastructure amounted to no more than US\$4 billion per year. In 2007, however, African countries received a minimum of US\$40 billion in external financial support to infrastructure. This compares well with the US\$40 billion estimated by the AICD study.

#### **4.2.1 Public Budget for Africa's Infrastructure**

79. Most governments in Sub-Saharan Africa spend between 6-16 per cent of the GDP each year on infrastructure, with transport and energy sectors together absorbing about 80% in the low income countries. The heavy spending on energy is a response to the widely recognized power crisis on the continent.

#### **4.2.2 ODA**

80. Since the G8 Summit in Kananaskis (Canada) in 2002 adopted the Africa Action Plan in support of NEPAD, the desire for a partnership with Africa has been reaffirmed at all subsequent G8 summits. The Commission for Africa report released in 2005 at the G8 Gleneagles Summit specifically recommended the scaling up of critical infrastructure investments to raise productivity, support trade, and thereby sustain growth and poverty reduction on the continent. In this regard, the G8 set up the ICA to build a strategic partnership among donors and stakeholders to facilitate the development of infrastructure in Africa. Though not a financing agency, the ICA can act as a platform to broker more financing of projects and programmes in Africa.

81. The G8 committed to raise and prioritise support to safe water and sanitation and also asked the World Bank and other multilateral development banks to develop a clean energy investment framework to encourage energy efficiency and accelerates investment and the deployment of cleaner technologies within the context of each country's national circumstances.

82. The Saint Petersburg G8 Summit (2006) declared its support for energy security and the adoption of a Plan of Action on Global Energy Security. This was followed by the Heiligendamm G8 Summit (2007), which declared support for climate change adaptation, energy efficiency and energy security. The Hokkaido Toyako G8 Summit (2008) reiterated its support for the promotion of integrated water resource management (IWRM) and good water governance.

83. The Africa-EU Energy Partnership (2007) was adopted by the Africa-EU Summit on energy access, energy security and climate change challenges. The EU-Africa Partnership on infrastructure (2007) will support regional development in four priority areas: transport, energy, water, and information technology and telecommunication networks.

84. Commitments in 2007 by ICA members alone reached \$12.4 billion, an increase of 61% from the previous year. ODA commitments to Sub-Saharan Africa increased by 59%. Multilateral institutions have continued to play a dominant role, responsible for 70% of total ICA commitments. The water and energy sectors received the major share of new commitments. Water commitments increased by 43%, energy by 62%.

85. Bilateral commitments rose by 86% from US\$1.9 billion in 2006 to US\$3.56 billion in 2007. These increases were largely a result of scaled-up contributions from the USA, Japan and France. Bilateral members of the ICA do not share the same approach to supporting Africa's infrastructure. Some are very active on bilateral project financing (France, Japan and USA); others (like UK-DFID) prefer to channel most of their support for physical infrastructure through multilateral aid channels and through budget support at the country-level.

#### **4.2.3. Multinational Financial Institutions**

86. Commitments totalled US\$8.8 billion in 2007 – 71% of total ICA commitments. The World Bank together with the IFC committed US\$3.58 billion in the region. This represents almost 40% of total commitments by multilateral agencies in 2007 and 29% of total overall commitments of ICA members. Transport and energy dominate WB commitments whilst IFC's activities are currently focussed on the ICT sector.

87. Replenishments of multilateral funds (IDA, ADF and EDF), along with the launch of the EU-Africa Infrastructure Trust Fund in 2007 will guarantee that the upward trend in commitments to the sector will continue. However, these advances are now threatened by the global financial crisis. In spite of these contributions, an overall annual funding gap of around US\$40 billion remains. It is clear that more finance is needed.

88. The African Development Bank Group committed around US\$2 billion, 23% of the total commitments by multilateral agencies and 17% of total ICA commitments. A large part of the ADB's non-ODA commitments were focused towards the energy sector in sub-Saharan Africa.

89. The European Commission (EC) committed around US\$1 billion, 12% of total funding by multilateral agencies and 9% of total ICA commitments. The EC maintains a strong supporter of the transport sector – over US\$900 million in 2007. Commitments by the European Investment Bank (EIB) reached almost US\$1.2 billion with a focus on the water and energy sectors.

#### **4.2.4. Non-OECD Partners**

90. Africa has traditionally depended on ODA to meet its infrastructure needs. But a growing share of the region's infrastructure finance is now coming from non-traditional sources and could therefore be considered complementary to support from ICA members. Leading this trend are non-OECD financiers, chiefly China, India and the Arab funds. While the Arab funds have been operating in Africa for decades, China and India began to step up their involvement in the early 2000s.

91. Chinese commitments alone are estimated to be a minimum of US\$5.2 billion in 2007. The largest flows have gone to road, rail and hydropower developments. India is also scaling up finance for infrastructure projects in the region, with commitments averaging US\$0.7 billion a year. India relies on its export import bank as the main conduit for infrastructure finance.



92. The Arab funds collectively committed US\$2.6 billion in 2007. Those providing the most support to African infrastructure projects are the Islamic Development Bank, the Arab Bank for Economic Development in Africa (BADEA), the Kuwait Fund, the OPEC Fund for International Development (OFID) and the Saudi Fund. Activities are broadly spread across 36 countries in Africa, with about half the resources going to transport projects (mainly roads), 30 percent to power projects, and 15 percent to water and sanitation projects.

#### **4.2.5. Private Sector**

93. Private sector participation in infrastructure in Africa is skewed towards information and communications technology (ICT) and to some extent the energy sector. In the transport sector, there is a gradual increase in the number of toll road projects. Port and airport concessions are also on the rise. The objective of many countries is to use public-private partnership arrangements to accelerate investment in infrastructure and improve service delivery.

94. In 2007, Nigeria launched the Africa Finance Corporation (AFC), which is expected to play an important role, as a private sector-led investment bank and development finance institution, in promoting private sector investment in power, transport and telecommunications infrastructure projects. The institution is looking to increase the number of PPP to close the infrastructure gap.

95. The creation of the Pan-African Infrastructure Development Fund (PAIDF), managed by the ADB, is a South Africa-led initiative to tap resources from potential shareholders including public and private pension funds and asset management firms.

#### **4.3. Challenges of Global Financial and Economic Crises**

96. The global financial and economic crisis is bound to have implications on finance for the infrastructure sector in Africa from development partners, private sector and domestic sources. Already the crisis has triggered the depreciation of currencies making borrowing more costly.

97. While ODA is expected to remain at current levels, the impact of the crisis on Africa will slow down private capital flows. Remittances from Africans in the Diaspora are also likely to be affected.

98. Recent data from Public Private Infrastructure Advisory Facility (PPIAF) on new infrastructure projects with private participation shed some light on the short-term impact of the financial crisis. Privately financed infrastructure projects continue to reach financial closure at a slower pace than in 2007. Globally, the level of investment in new projects in 2008 declined by about 40% from the level in 2007.

99. How should Africa respond? The answer will vary from country to country and from sector to sector. A possible response will be to accelerate intraregional trade and investment. The other is to reduce the cost of doing business by improving the investment climate and strengthening local and regional financial markets. Pension funds for example can provide additional long-term capital for domestic investment.

Finally, the region could also benefit from the vast potential of sovereign wealth funds and the emerging infrastructure bonds and infrastructure funds.

## 5. KEY ISSUES AND RECOMMENDED ACTIONS

100. Several key lessons have emerged from the implementation of STAP to-date. First, lack of conclusion of Cooperation Agreements and delay in putting the relevant institutions in place were major obstacles to implementation of regional projects. For example, the delay in the ratification of the AFREC Charter to give it the legal statue impeded efforts to obtain funding for implementing the Facilitation Projects in energy sector. Similarly, implementation of the Yamoussoukro Declaration was also delayed for the same reason.

101. Second, countries tend to give more importance to national projects and consequently give less attention to regional projects in the preparation of their national development plans. Consequently, implementation of regional projects often lags behind the agreed time frame. Third, no major difficulties have so far been encountered in raising the necessary financing for the “soft” projects in STAP (studies, capacity building and facilitation projects). The contributions of NEPAD-IPPF and partner project preparation funds to this end are commendable.

102. On the other hand, mobilization of investments for implementation of physical projects has been more difficult. This is due in part by the nature of investment in regional infrastructure projects, where detailed negotiations are required between the project owners and the financing institutions. The establishment of the NEPAD-ICA has already yielded some positive results in mobilizing significant investments from international financial institutions and cooperating partners.

103. The above lessons, together with other related strategic issues are presented below for consideration by the Summit. The following are some actions to be taken in order to address this question, with specific focus on regional and continental dimensions. National dimensions will be considered only insofar as they have impact on, or may be affected by, the regional and continental dimensions.

104. **African Ownership and Responsibility.** In line with the AU vision articulated in NEPAD, the development of Africa is first and foremost the responsibility of Africans. In the case of infrastructure development, African countries must lead the way in determining priorities and investing in its development. The proposed actions to be taken are:

### **Actions:**

- Coordination role must be entrusted to the AUC with a clear mandate to plan and ensure implementation of agreed programme, with appropriate monitoring and evaluation mechanism to follow up on implementation of agreed programme. This mandate must be consistent with the relevant articles of the Constitutive Act of the AU itself. The experience of EU in developing the Trans-European Roads Network demonstrates the efficacy of this approach.

- Integration of the agreed priority programme defined in the action plans into the national programmes of Member States for implementation.
- Contribution by Member States to various financial facilities established for implementation of regional programmes (e.g. the NEPAD-IPPF and NEPAD-ICA).
- Establishment of a mechanism for consultations with civil society on national commitments to regional initiatives.

105. **Time for Action is Now.** African countries have over the years adopted many programmes and initiatives for developing infrastructure. However, the implementation has posed many difficulties. That is why the current situation remains dire. At the same time Asian countries have been able to increase substantially the access to modern energy, to develop the Trans-Asian Highways and the Trans-Asian Railways networks over fifty years, while their ports are some of the most competitive in the world. Similarly, the EU has developed the Trans-European Networks linking the infrastructure and services of all its members as well as building and regulating EU trans-national energy markets and know-how on sustainable new energy technologies. Can we learn from them the secret of their success? The proposed action to be taken is:

**Action:**

- Each country commits to implement the relevant elements identified in the action plans defined by the relevant African ministers and respective RECs for the various sectors of energy and transport within the specified and agreed time frame.

106. **Deepening Regional Cooperation and Integration.** Transport and energy infrastructure and services are critical elements for achieving regional cooperation and integration. Conversely, regional cooperation and integration are keys to development of transport and energy in terms of larger market and wider investment space. African countries need to deepen regional cooperation and integration. The proposed action to be taken is:

**Action:**

- Harmonization of programmes among adjacent RECs so as to speed up continental integration under the leadership of the AU.

107. **Mobilization of Resources for Development.** Lack of resources is a perennial problem, which needs to be addressed in a new and innovative manner. Requirements for transport and energy infrastructure and services are enormous. Public sector alone cannot meet the demand in its entirety: budgetary constraints reduce public outlays for investment; recent experience with debt problems spurred African governments to reduce public spending; ODA, traditionally major contributor to public sector investment, has declined significantly; FDI attracts technology and skills transfer as well as opening export markets in countries of origin. Public-Private Partnership (PPP) must therefore be actively promoted since its contribution extends

beyond financing, but includes technology transfer and capacity building. The proposed actions to be taken are:

**Actions:**

- Deepening regional capital markets for more effective mobilization of local savings and regional financial integration. Capital markets provide opportunities for greater participation by domestic investors. But experience of Safaricom indicates need for better regulatory frameworks for the process in order to buttress confidence in this relatively new approach.
- Access to long-term financing by setting up special investment instruments, such as infrastructure bonds, to harness resources for infrastructure investments (e.g. African Diaspora, Sovereign Wealth Funds, etc.) This is a potentially significant source of capital inflows to Africa.
- Strengthening PPP arrangements by involving the private sector not only in project financing and implementation, but also as stakeholder in policy formulation, enforcement of rules and regulations.
- Continued actions to improve the investment climate in African countries for increased private sector participation by setting up legal, regulatory and institutional reforms to provide predictability and stability which facilitate private investment. Aggressive promotion of Africa as an investment destination since achieving the right investment climate by itself may not necessarily result in increased inflow of investment.

108. **Developing Capacity for Implementation.** The NEPAD strategy is anchored on the ability of RECs to lead implementation of infrastructure projects in their respective regions. In this regard, AUC has prepared a coordination mechanism for the development of infrastructure in Africa, which is anchored on enhancement of professionalism including exchange of experiences in policy, strategy and programme formulation as well as improving communication and information sharing among stakeholders. The proposed action to be taken is:

**Action:**

- Strengthen the RECs as focal points for regional cooperation and integration and as a framework for policy harmonization, expanded market, increased trade and therefore investment.

## **6. CONCLUDING REMARKS**

109. It is necessary that countries consider the benefit realized through integrated regional resource development in their national infrastructure planning and generate cooperative projects. Enhanced regional integration will increase market size in Africa and help attract investors constrained in part by small size of domestic market in the continent. For the program to be realized, the necessary policies, regulatory frameworks and investment codes must be put in place to attract investment.

110. Investment under PPP and financial support from international development partners would require countries to contribute counterpart funds. In this regard, African governments may need to establish national and regional capital markets so as to raise counterpart funds required for investment.

111. Infrastructure projects, in particular roads and hydropower stations, tend to have a long gestation period. This is largely due to the comprehensive manner in which projects are prepared and implemented. It includes project conception, pre-feasibility and feasibility studies to show the viability of the proposed project for financing. After securing necessary financing, the implementation of the project involves tendering process for the procurement of the consultant and subsequently the contractor. Construction also takes a long time before the project is completed and commissioned.

112. Each activity indicated above takes significant time. It is therefore essential that the preparatory and construction phases of project implementation are closely managed in order to avoid delays. Project executing agencies should always be adequately equipped to manage projects. Delays in project implementation most often result from delays in obtaining parliamentary approval for financing, and in fulfilling loan conditions imposed by financing institutions; lack of counterpart funds; delays in completion of construction itself. In the case of major investment projects, a typical time frame from conception to financial closure averages ten years. Therefore, when assessing the performance of infrastructure programmes such as NEPAD-STAP, the above factors must be taken into account.

113. Since 2005 the African Union Ministers of transport held two general and subsector meetings where specific action plans were adopted. Similarly, the Ministers of Energy also met and adopted Action Plans for Sustainable Energy Development. The Summit subsequently endorsed those action plans at its various sessions. The Summit will now provide the political direction for implementing those Actions presented earlier for the accelerated development of the energy and transport infrastructure and services in Africa for the achievement of the Millennium Development Goals.

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2009-02-03

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