

ORGANISATION DE COOPÉRATION ET DE DÉVELOPPEMENT ÉCONOMIQUES



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

DAC POVERTY REDUCTION NETWORK (POVNET)
TASK TEAM ON INFRASTRUCTURE FOR POVERTY REDUCTION
3RD WORKSHOP ON DEVELOPING THE DAC GUIDING PRINCIPLES

Tokyo, March 22-24 (am) 2005

ROOM DOCUMENT 3

Regional and Cross-border Infrastructure and its Role in Trade, Pro Poor Economic
Growth and Poverty Reduction
CONTRIBUTION BY DAVID STAFFORD OF OXFORD POLICY MANAGEMENT
FINANCED BY DEPARTMENT FOR INTERNATIONAL DEVELOPMENT UK

DRAFT 18 February 2005

In confidence

Regional and cross-border Infrastructure and its role in trade, pro-poor economic growth and poverty reduction

Background Paper

[] 2005



Oxford
Policy
Management

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Glossary of abbreviations

ADB	Asian Development Bank
AH	Asian Highway
ASEAN	Association of South East Asian Nations
DFID	Department for International Development
ECOWAS	Economic Community of West African States
GMS	Greater Mekong Sub-region
ICT	Information and communications technology
IWRM	Integrated water resource management
MDB	Multilateral Development Bank
MRC	Mekong River Commission
NEPAD	New Partnership for Africa's Development
NELSAP	Nile Equatorial Lakes Subsidiary Action Programme
NBI	Nile Basin Initiative
PANAFTTEL	Pan-African Telecommunications Network
PRC	People's Republic of China
R&C-B	Regional and cross-border
RASCOM	Regional African Satellite Communications Organisation
RERA	Regional Electricity Regulatory Authority
RECs	Regional economic communities
SADC	Southern Africa Development Community
SKRL	The Singapore - Kunming Rail Link
STAP	(NEPAD's) Infrastructure Short-Term Action Plan
TOR	Terms of reference for this study
UEMOA	West African Economic and Monetary Union (<i>Union Economique et Monétaire Ouest Africaine</i>)
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WAGP	West African Gas Pipeline
WAPP	West African Power Pool

1. Introduction

Oxford Policy Management was commissioned by DFID to prepare a short paper on the role of regional and cross-border (R&C-B) infrastructure in promoting trade, pro-poor growth and poverty reduction, and on the opportunities and constraints in providing sustainable infrastructure that meets these objectives. Our full terms of reference (TOR) are reproduced in Annex A. The paper is intended to provide inputs to the draft of the Guiding Principles being prepared by the OECD DAC Infrastructure and Poverty Reduction Task Team. It provides a snapshot and is not intended to be comprehensive.

The paper is primarily based on a desk study of experience to date, supported by a limited number of consultations with the InfraPoor core donor group and with infrastructure specialists. The main documents consulted – some of which were provided on an “in confidence” basis - are listed in the Bibliography. The conclusions and views expressed in the paper are those of the consultants alone.

Scope of paper

The TOR limit the scope of the paper to the main economic infrastructure sectors, namely transport, energy and communications, although we were asked to give some consideration to important regional trans-boundary water initiatives such as the Nile Initiative. We have further refined the transport and energy sectors as follows:

- **Transport:** the main opportunities (in the context of pro-poor growth and poverty reduction) are roads and railways. We have not found any examples of R&C-B airport investments that have been aimed specifically at pro-poor growth or poverty reduction. Port developments (eg new terminals) may form part of new or upgraded multimodal transport corridors, but, in the interests of keeping this paper within manageable limits, they have not been addressed separately.
- **Energy:** we have focused particularly on the electric power sector, and on gas pipelines. We have excluded oil pipelines on the grounds that the links with poverty are less strong and the oil sector is of limited interest to bilateral donors.

In view of the small level of inputs for the study (15 days), the TOR suggest that the study might focus on one or two regions in Africa and Asia. In Africa we have focused particularly on West Africa, while drawing on examples in other regions where these provide useful insights. In Asia we have focused on South East Asia, and more specifically the Greater Mekong Sub-region (GMS), as we believe that this region should provide more lessons for donors than South Asia (which has fewer countries and is dominated by India).

The main focus of the paper is to identify the particular issues that are different from those of infrastructure projects within national boundaries. It therefore builds on the literature on the general links between infrastructure and pro-poor growth/poverty reduction, and on the broad set of general and sector-specific issues relating to infrastructure projects, which are assumed to be covered elsewhere in the Guiding Principles.

The issues that arise in R&C-B infrastructure projects can be resolved either on a bilateral basis, or in the context of a regional organisation, which we refer to in the rest of this paper as a Regional

Economic Community (REC)¹. We have assumed that the distinction in the TOR between regional and cross-border infrastructure refers to this difference so that:

- **regional** infrastructure projects are those implemented through RECs (and typically involve more than two countries); and
- **cross-border** infrastructure projects are those implemented through bilateral agreements and contracts (and typically involve only two countries).

RECs are established in a variety of forms and for a variety of objectives, of which the development of regional infrastructure projects is only one, and possibly a subsidiary, objective. The primary motivation may be to promote greater regional integration (eg through trade), but there are many different types of arrangements². In this paper we have not delved into wider regional integration issues beyond those that have a direct impact on infrastructure investments and services.

Generic R&C-B issues

The key distinguishing characteristic of R&C-B infrastructure is that more than one sovereign state is involved. This feature raises a range of additional issues that fall into a number of categories:

- **Political:** the requirement for sufficient political will, mutual trust and goodwill between the states involved in the project, to enable the planning and implementation to be executed, and to reduce to acceptable levels the external risks arising from increased dependence on another country/other countries;
- **Technical:** harmonisation of technical standards and regulations, covering operation and maintenance, health, safety and the environment;
- **Financial:** mutual agreement between countries on the financing of the costs of construction, operation and maintenance, and the sharing of such costs (and any revenues);
- **Regulatory:** mutual agreement on any economic regulation (eg access/use, and tariffs), and quality of service regulation;
- **Institutional:** mutual agreement on the bodies that will be responsible for all stages of project implementation, operation, maintenance and regulation; and
- **Legal:** contracts and/or agreements between the countries, and the relevant jurisdiction.

Many of these issues apply to all sectors. In particular, the need for trust is a common feature in all projects, and it is self-evident that it is difficult to implement a successful R&C-B infrastructure investment if there is an absence of trust. A further common issue in all projects is how to reach an

¹ We have consistently used the term Regional Economic Community to cover all forms of regional organisation aimed at achieving greater co-ordination, co-operation or integration between its members. Other terms are sometimes used for such organisations, eg Regional Economic Integration Organisation (REIO).

² Regional integration arrangements include, for example, a preferential trade area, free trade area, customs union, common market, economic union, and political union.

optimal co-operative solution that allocates the costs (and benefits) in a form that is acceptable to all parties.

In the following sections we discuss these and other issues at two levels: first at the general level in the context of RECs, and second the particular issues relating to each sector, using selectively the headings shown above.

A framework for linking infrastructure and poverty reduction

Before getting into the substance of the paper, it is helpful to have a framework that identifies the main links between infrastructure and pro-poor growth/poverty reduction.

The welfare of the poor can be affected by both the infrastructure **investment** and by the **services** provided through use of the infrastructure. Infrastructure **investment** can have both positive and negative impacts. The positive impacts are mainly through the creation of employment opportunities directly linked to the construction and maintenance of the investment, and the potential negative impacts are mainly through the displacement of communities to make way for the investment (requiring resettlement programmes). There may also be negative environmental impacts, requiring sensitive decisions on the routing of the infrastructure facility. These impacts are broadly the same for all the main infrastructure sectors covered in this paper, and are not generally discussed further.

The impact on the poor of improved infrastructure **services** may be defined as **direct** or **indirect**, according to whether it derives:

- from improving access or quality, and/or reducing costs, to infrastructure services **directly** for the poor consumer of these services, or
- from improving access or quality, and/or reducing costs for other users, thereby **indirectly** creating jobs and other opportunities for the poor.

This distinction is described more fully in Annex B, including a summary of the main direct and indirect impacts that might be derived from different infrastructure services. The impacts are generally positive, but can in some cases be negative (see Annex B).

Structure of the paper

The remaining structure of this paper broadly follows the terms of reference:

- Section 2 - general issues relating to **RECs**;
- Section 3 - sector-specific issues in the **transport** sector (ie road and rail); Section 4 - **energy** (ie electric power and gas); Section 5 - **communications**; Section 6 - **regional water initiatives**, Each of these sections follows the same format: some examples (mainly from South East Asia and West Africa), followed by opportunities and constraints;
- **Lessons to be learned** (Section 7), which contains our main messages and conclusions.

2. Regional Economic Communities

Before discussing each sector, it is instructive to examine the role of RECs in R&B-C infrastructure, as the RECs raise a number of cross-sectoral issues. Depending on the interests and intentions of the participants, RECs can range from a consensus-bound treaty (such as the Association of South East Asian Nations, ASEAN) to much looser arrangements (eg the case-by-case opt-in/opt-out flexibility that characterises the GMS). This section covers the issues under opportunities and constraints on the lines suggested in the TOR. It draws especially on the experience of the GMS in South East Asia, and of the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (UEMOA or Union Economique et Monétaire Ouest Africaine) in West Africa.

Opportunities

RECs typically have wider aims than implementing R&B-C infrastructure projects, but they provide a political and institutional framework within which such projects can be discussed. They thereby provide the opportunity to build up the necessary trust between countries, and the structure within which specific projects can be identified, developed and implemented.

In Africa, there is an umbrella organisation in the form of the New Partnership for Africa's Development (NEPAD). NEPAD prepared in 2002 an infrastructure Short-term Action Plan (STAP), looking at Africa's infrastructure needs on a regional basis. The STAP identifies 20 top priority projects on a regional or continent-wide basis, estimated to cost \$8.12 billion, of which half is to be financed by the private sector.

RECs also offer the opportunity to deliver certain public goods. For example, peace and security might be enhanced by more extensive links between countries, such as power interconnection. The process of achieving greater integration builds trust, and increased mutual dependence raises the costs of conflict. The converse of such benefits is that, if conflicts do occur, the resulting economic costs are magnified by the increased integration. The political dangers are particularly acute for landlocked countries that are dependent on a single main transit route for their international trade.

Constraints

Some of the main problems in developing and implementing R&B-C infrastructure investments through RECs are summarised below. Annex C provides further details on the situation in West Africa with particular emphasis on ECOWAS.

Multiplicity of RECs: In Africa there are 14 RECs, with two or more in almost all sub-regions. All but 6 of the 53 African countries are members of more than one REC (eg ECOWAS and UEMOA in West Africa). In South East Asia the picture is at least as complex. Some argue that these arrangements offer greater scope for countries to pursue their regional objectives on multiple tracks, but they can also result in duplication and added complexity. They also place an extra burden on developing countries' already scarce human and financial resources.

REC boundary limitations: some projects may not fit within the geographical boundaries of a particular REC. This applies, for example, to continent-wide or sub-continent projects, for which

other bodies are created, thereby adding to the complexity of co-ordination and the risks of overlaps.

Authority of RECs: The RECs typically have difficulties in exercising sufficient authority over the national governments of member states. Governments may fail to ratify decisions made by the RECs (or substantially delay the process), or fail to translate their commitments under regional treaties into national policies and legislation. The ideal solution is to give the RECs the authority to issue decisions or directives that take effect immediately without the need for ratification by each member state, and to consider a legal framework under which sanctions could be imposed in the event of failure by member states to implement ratified decisions. However, there are many obstacles to achieving such an outcome, deriving essentially from reluctance by member states to cede greater sovereignty and powers to a REC.

Resources of RECs: The availability of financial and skilled staff resources to develop and prepare projects present a common constraint in RECs. The funding problem is partly a question of low levels of contributions, or non-payment of contributions. Donors can potentially help with the alleviation of both resource constraints. It is also important to align ambitions with a sufficiently realistic assessment of implementation capacity.

Funding of investments raises two issues:

- **Donor funding:** many R&B-C infrastructure investments are funded by a number of donors, each donor having its own approval processes and timetables. The burden placed on RECs by different donor requirements could be greatly reduced by improved donor coordination. Further, some donors are primarily driven by national programmes and have difficulties addressing regional needs;
- **Use of private sector:** a R&B-C infrastructure investment may be a potential candidate for attracting at least partial private sector finance. Some RECs are alert and responsive to such opportunities, but others – particularly those in Africa – are not. In some cases the private sector can not only assist in the financing of projects, but also act as a partner in design, preparation and securing buy-in by all member states.

Equitable sharing of costs and benefits: some projects are mutually beneficial to all parties, but in most cases there are winners and losers or an unequal sharing of the benefits. This constraint can be overcome to some extent by a transparent, equitable, rules-based system to share gains and resolve disputes.

Commitment of member states: regional infrastructure projects require buy-in by all parties. In many cases the connection is missing between regional commitments and national plans and priorities. This may be an oversight, or it may arise through over-ambition on the part of the REC. If a member state's domestic infrastructure is substantially under-developed, the state government might understandably place a higher value on filling service gaps at home than on regional projects that may be perceived as providing a large proportion of the benefits to outsiders.

Continuity and sustainability: regional projects take a considerable time to bring to fruition, requiring sustained political commitment. Such commitment may be upset by political changes in member states, or by the turnover of staff working on projects without adequate handover.

The GMS stands out in South East Asia as a significant success story in infrastructure planning and development. Box 1 below sets out some of the characteristics that contribute to that success. Further details are given in Annex D.

Box 1 - Greater Mekong Sub-region Success Factors

The GMS experience has a number of features specific to its geography and its member states, which it may not be possible, or even necessarily appropriate, to replicate elsewhere. Nevertheless, the GMS process offers useful guidelines for consideration including:

Geography: GMS consists of a reasonably compact landmass, in which every member state shares borders with at least three others, so that the benefits of R&B-C infrastructure are immediately recognisable. Further, the GMS lies between the dynamic economies of PRC and Thailand to the north and south, who are increasingly eager for access to one another, and to the intervening markets of the GMS, which is itself poised to benefit from sub-regional trade.

Politics: It may be advantageous to have some degree of similarity among sub-region members, if not in income or in population, perhaps in physical size. For example, including all of the Peoples Republic of China (PRC) instead of only Yunnan Province would totally distort the relationship among the GMS members as well as marginalise the areas of shared priorities.

Strategy: It can be useful to have a broad long-term vision - provided no members deem it to be overly assertive - but to start with small concrete, confidence building measures. Agree upon a realistic number of well-defined targets and maintain focus.

Institutional structure: While a formalised framework provides a sense of shared identity and purpose and can contribute to efficiency, it is not necessary that such an association and its decision-making be highly institutionalised. The GMS example of an opt-in, opt-out approach can work for many infrastructure initiatives. An incremental approach precludes the need for unanimity, although, to maximise the benefits, sub-regional projects would ideally be undertaken within the framework of a reasonably well-defined programme that enjoys the support of all members.

Sponsorship: There is a valuable role for an external sponsor to serve as a disinterested “honest broker”, possible catalyst, source of assistance (technical and perhaps project funds), and mobiliser of other external resources. The ADB has been committed to such a role in the GMS, facilitated by a budget separate from individual national allocations.

Timing: Patience is a necessary virtue; a mid- to long-term planning horizon is essential.

3. Opportunities and constraints in the transport sector

A. Roads

Examples in South East Asia

The principal R&B-C road initiatives in South East Asian are the continent-wide Asian Highway (AH), the ASEAN Highway Project, and the five GMS Economic Corridors. The AH is a network of international routes spanning the continent, initiated in 1959 by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) to promote regional cooperation and trade. The initiative was recognised as hugely expensive, and therefore aims to provide a framework for the coordinated development and upgrading of existing regional highways, making the maximum use of existing routes. While considerable progress has been made, there continued (as at 2002) to be a few missing links and unpaved sections.

The GMS provides an interesting example of effective regional co-operation. Towards the end of 2002, agreement was reached on the financing of the upgrading of a road in Lao PDR that forms part of the GMS North-South Corridor. The 228 km road will complete the missing section in an all-weather road link between Kunming in the Yunnan Province of the People's Republic of China (PRC) and Bangkok in Thailand, and is to be financed equally (one third each) through loans from the ADB, and the governments of Thailand and the PRC. Lao PDR is only financing some of the local costs, despite the project being wholly within its boundaries. This is an interesting example of a financing scheme that recognises the benefits to the different parties, as well as illustrating the value of a donor helping to act as catalyst.

The project will also help to reduce poverty in the two northern provinces of Lao PDR, particularly as it includes:

- A resettlement plan for communities living by the road;
- Construction of feeder roads to give communities better access to the road; and
- A preventative education programme to mitigate the risks of HIV/AIDS and the trafficking of women and children.

Examples in West Africa

The regional road infrastructure in West Africa remains poor. One measure of road integration is the percentage of the sub-region's Trans-African Highway that is either missing or not up to design standards. The percentage was 28% in West Africa in 2000.

The main progress that has been made in recent years is the achievement of financial close in December 2003 for the Burkina Faso/Ghana/Mali road project funded by the Africa Development Bank. The road is part of a comprehensive Transport Facilitation programme, which includes road studies, road rehabilitation, border posts, a HIV/AIDS initiative, radio communications, and weigh stations, and is due for staged completion over the period 2005-2007. The project is being coordinated by UEMOA.

NEPAD's STAP includes, among its 20 top priority projects, the Fougamou-Doussala Road Project (between the capitals of Gabon and Republic of Equatorial Guinea), Kati (Mali)-Saraya (Senegal) Road Project, Mamfe (Cameroon)-Enugu (Nigeria) Road Project, and a general Facilitating Road Transportation Project.

Opportunities

The primary motivation for new or upgraded R&C-B roads is typically connected with the facilitation of **trade** in goods (and to a lesser extent the movement of people, including tourists). Studies have shown that a 10% reduction in transport costs can increase trade by 25%; and that the average transport costs of the average landlocked country are 50% higher than in the average coastal country while trade volumes are 60% lower³. Poor infrastructure therefore acts as a non-tariff barrier to international competitiveness and trade.

The links between trade, pro-poor growth and poverty reduction are complex, and outside the scope of this paper. In very broad terms, the links are primarily through the impact of trade on growth, and therefore the impact is indirect. The essential point is that R&C-B infrastructure on its own is insufficient. Other measures (eg the development of new capabilities, institutions and services, and an inclusive process of economic growth) are required to create a virtuous link between increased trade and poverty reduction⁴.

In some cases cross-border roads may be built to **open up remote areas**, more easily accessible from a neighbouring country. In these cases, there may a closer link between the infrastructure investment and poverty reduction, if, for example, the road provides enhanced access to areas where there are substantial numbers or proportions of poor people, and a low level of transport services. There is, however, the potential for negative impacts in previously isolated areas, as new and improved cross-border routes become conduits for communicable diseases, and trafficking of drugs and people. The opening up of formally remote areas also has the potential to increase rural-urban migration. Box 2 below illustrates the challenges faced in opening up remote areas by reference to the Wa people of Myanmar.

Box 2 - Remote area example – Wa community

The Wa community lives in an isolated mountainous area in northeast Myanmar, adjacent to the PRC border. There is no formal medical care or educational system, infant mortality is estimated at around 50%, and there are many widows and orphans due to past conflicts. Most rural households are very poor and suffer a 4-8 months rice deficit. The population survives by engaging in (opium) poppy production.

The Myanmar government appears to fear a strong independent Wa nation, and therefore prefers to keep them oppressed, poor and weak. Meanwhile, the Wa people share a similar history, ethnic origins and languages as their Chinese neighbours. In 1997 the Wa authorities hired Chinese contractors to construct a road north to the PRC border, and strong economic links have developed between the communities on each side of the border. The UN Office on Drugs and

³ Willoughby, 2004

⁴ See for example UNCTAD's Least Developed Countries, 2004 Report.

Crime has had an active programme in the area since 1998. The first phase was not particularly successful due to the inability of the Myanmar government to provide access and support. The second phase has been scaled down in complexity and focuses on a sustainable, community-based approach to reduce and eventually eliminate opium production and trafficking in the region.

The importance of R&C-B roads to a country depends to a large extent on **geography**, a valuable distinction being between landlocked and coastal countries.

For **landlocked countries**, such roads are essential for the movement of goods and people. All landlocked countries have existing cross-border roads, so that investments in new or upgraded roads typically relate to reducing the costs of transporting imports and exports, as well as trade creation. For most **coastal countries**, the primary motivation is to promote greater regional or sub-regional trade, although it may also increase the opportunities for benefiting from increased transit traffic.

Roads may also be relatively important for countries with **small populations**, which need to rely on regional rather than national markets to enjoy the benefits of economies of scale in production.

Constraints

The constraints to R&C-B road projects can be broken down into those relating to the investment in the road, and to the services that utilise the road.

Investment

On the investment side, there are few **technical** issues specific to cross-border road development other than agreement on road and bridge design standards, and on road signage.

A specific **financial** constraint raised by cross-border roads is the possibility that the country through which the road passes may not gain the largest benefit from the investment, but this is capable of solution as is illustrated by the South East Asia example above.

Ongoing maintenance raises **financial** and **institutional** issues. Potential ways of addressing this constraint include the establishment of Road Funds, the involvement of the private sector in maintenance and delivery (eg through Build and Operate contracts, and Output Based Aid), or more flexible donor support for recurrent costs.

Services

The anticipated benefits from R&C-B roads cannot be fully captured solely from investment in the physical infrastructure. International transport should be considered as a unified activity from origin to final destination requiring three broad ingredients: transport infrastructure; transport and logistics services; and efficient bureaucratic procedures.

It is at the modal break points and/or at international boundaries that costs are incurred and the system tends to deteriorate. The most important spheres for Government action include customs, rights of passage (goods, people and vehicles), security and safety, load specifications, insurance standards, and transit and user fees. On the private sector side, production firms, especially if integrated into global production chains, seek not only low transport costs but also a host of sophisticated services (eg short transit times, certainty of schedules, careful and sometimes specialised handling, certification of product quality, and security). Logistics is the art and science

of managing this integrated transport process to meet both public and private needs expeditiously and cost effectively.

A common constraint in developing countries is bureaucratic delays at borders, which arise for **regulatory** and **institutional** reasons. Such delays can be substantially reduced⁵ through a streamlined regulatory environment that harmonises standards and enforces conformance with international practice, within the institutional framework of a REC. However, this is not straightforward, as there are not single international standards for all the numerous topics that are typically covered in conventions and protocols issued by regional and sub-regional RECs. This difficulty is further compounded because many countries are members of more than one REC. A single state may therefore agree simultaneously to several different conventions and/or protocols, all fundamentally positive but individually unique. The result is a series of intertwining but differing rules addressing the same or similar issues, albeit perhaps applicable only to one or another border of a given state.

The lesson to be drawn is that countries should look, wherever possible, to establish uniform cross-border regimes with all their neighbours. Countries involved in more than REC should consciously strive to minimise conflicting procedures and practices from one to another.

B. Railways

Examples in South East Asia

The South East Asian rail network is extensive, but not yet integrated, The main missing R&C-B links are: Cambodia – Vietnam; PRC – Myanmar; Myanmar – South Asia; Thailand – Myanmar; Thailand – PRC through Lao PDR and/or Myanmar; and Thailand – Vietnam through Lao PDR. The main barriers to the removal of these barriers are cost, and differences in gauge between the PRC and other countries in South East Asia.

The Singapore - Kunming⁶ Rail Link (SKRL) Project is one of ASEAN's four flagship projects, to provide part of an Indo-China and ASEAN sub-region corridor. The PRC is planning to construct a compatible one-meter line for its segment between Kunming and the Vietnamese border. With spurs from Thailand to Myanmar and Vietnam to Lao PDR, the system would interconnect all but the archipelagic members of ASEAN. The SKRL is thereby seeking to help open up Laos, Cambodia, Vietnam, Myanmar and inland China to trade through Thailand, Malaysia and Singapore. It is also envisaged that the SKRL will remove boundaries between ASEAN countries, and reduce long journey times compared to current modes of transport. Another objective is to help foster increased mining activities by enhancing the scope for exporting minerals from the region.

The project was endorsed by the Fifth ASEAN Summit in Bangkok in 1995, and a special working group was established in 1996, with the task of examining the technical and financial feasibility of the SKRL. Malaysia became the co-ordinator of the project and chairman of the special working group. Malaysia's contribution towards the proposed development of a double track has included

⁵ Regulation can deal with many of the technical causes of delay, but will not necessarily deal with causes such as corruption and political interference.

⁶ Kunming is in Yunnan province in PRC.

two links completed in 1995, a further link scheduled for completion in 2006, and two links planned to be completed in 2010 (all within Malaysia).

Examples in Africa

There is over 10,000 km of railway in West Africa. ECOWAS has given little attention so far to the improvement of the regional network, but the African Development Bank is financing a feasibility study of railway connections in West Africa. One of the constraints will be the existence of two gauges (the "Cape" and narrow gauge).

Many railways are facing increased competition from road transport, and are in severe financial difficulties. For example, the Abidjan (Ivory Coast) - Ouagadougou (Burkina Faso) railway once enjoyed a dominant position for the transport of freight and passengers to and from Burkina Faso, but substantial traffic now uses the port of Lomé (in Togo), following development of the road network between Togo and Burkina Faso. The main economic role of the railway is now the movement of bulk international freight traffic (petroleum products, containers, fertilizers, grain, clinker, cement, and cotton), petroleum products within the Ivory Coast, and to a lesser extent long-distance international passenger traffic.

East Africa provides an example of plans for a new rail link. In October 2004, the African Development Fund approved funding for a study to determine the optimum solution for the operation of a railway line between Isaka (Tanzania) and Kigali (Rwanda). The aim of the project would be to open up new development opportunities in a large area covering Rwanda, the regions of Shinyanga and Kagera in Tanzania, Burundi, and the east of the Democratic Republic of Congo. This area is mainly rural, but has an abundance of mineral wealth. Substantial interest has been shown in the area by multinational mining companies (Australian, American, and African), but they are not prepared to make any commitments due to the distance from suitable maritime ports and the absence of adequate transport infrastructure. The distance from Kigali to Dar Es Salaam is 1,400 km, of which the Isaka-Kigali section is a road that is unusable during the rainy season.

Opportunities

Investment in new railways in developing countries are typically justified by mineral and other developments that generate regular large tonnages of traffic and/or the transport of goods over long distances (from, say, 300 kms upwards). Such investment opportunities will be relatively rare.

In the context of increased regional integration and trade, there may be other opportunities to improve interconnectivity between national railway networks by identifying synergies between domestic improvements and new or enhanced international corridors. Such links are potentially of particular importance to landlocked countries, and other long distance corridors for which railways are better suited than road transport.

Being less flexible than roads, railways tend to be of lesser importance in the context of pro-poor growth and poverty reduction, and their impact on poverty reduction is typically indirect. They can, however, be used for the movement of people, although passenger traffic is unlikely to be the primary justification for a railway R&B-C investment.

Constraints

Many of the constraints for R&B-C railways are similar to those for roads. Some of the main railway-specific issues are discussed below.

Investment

At the investment stage, **financial** issues can be a major issue due to the high cost of railway infrastructure.

A railway-specific **technical** issue is the compatibility of gauges. If existing domestic railways in the region use different gauges, either new track has to be laid, or there has to be a change of motive power, and wagons or bogies, at the border.

Services

The **regulatory** issues include pricing; access to the network in transit countries, and safety. For example, there is evidence that the Chinese charge higher (discriminatory) prices for Mongolia's imports and exports through the PRC, and that priority in wagon allocation is given to domestic over transit traffic on the congested network. A persistent constraint in many countries is the limited availability of equipment, locomotives and wagons.

Many of the **institutional** constraints relate to the arrangements at the border. For example, despite considerable progress in Malaysia-Thailand railway collaboration, container trucks and their drivers are still not permitted to cross the border, and boxes have to be transferred from one set of equipment to the other.

4. Opportunities and constraints in the energy sector

A. Power

Examples in South East Asia

The main power interconnections in South East Asia, that are currently operating or are planned, are designed to exploit the low cost hydroelectric potential of Lao PDR, Myanmar and Yunnan Province in PRC. An example is the Theun-Hinboun hydroelectric power project in Lao PDR, designed to supply energy to Thailand. The project is being financed by the Thai government, private sector and ADB. Cross-border power energy transactions in South East Asia consist to a large extent of long-term commercial contracts with dedicated point-to-point delivery capacity. Although there have been many examples of bilateral energy sales arrangements, most international energy trade to date has been unidirectional on a producer to consumer basis, rather than the development of an integrated regional energy system.

A start has been made in the GMS to realising a regional power system. Five of the six member states have ratified an inter-governmental agreement on regional power trade, and a coordination committee, comprising member country representatives, began work in July 2004 to oversee preparation of a Regional Power Trade Operating Agreement. However, the scope for a regional system is circumscribed by the low level of development of an integrated grid in some of the member states. In particular, Cambodia has 22 separate power stations and no transmission grid, Lao PDR has three separate regional grids, and Vietnam has separate northern and southern systems.

Examples in West Africa

There is large scope for economic R&C-B power investments in West Africa as the region has unbalanced sources and uses of power. There are currently a number of interconnections between neighbouring countries, but in 2000 the heads of state of ECOWAS approved a master plan to complete the integration of national electricity grids and to establish a regional electricity market, the West African Power Pool (WAPP). Due to differences in infrastructure development and to facilitate implementation of the WAPP, the region has been divided into two groups of countries, Zone A to the east and Zone B to the west. WAPP is included in the top 20 projects in NEPAD's STAP (together with Power Interconnections in East, Central and West Africa; and Establishment of Regional Linkages for the African Energy Commission).

Phase 1 of the WAPP master plan has an infrastructure component and an institutional development component. The infrastructure component is mainly transmission links, but later phases of the master plan will include substantial generation components as well. Some Phase 1 transmission projects were completed in 2002 (between Ivory Coast and Burkina Faso, and between Mali, Senegal and Mauritania), two others are due for completion in 2006 (between Ivory Coast/Mali, and Nigeria/Benin), others in 2008 (Ghana to Togo/Benin), and the balance of Phase 1 in 2010.

Opportunities

The primary motivation for R&C-B power projects is to reduce the cost of supply compared with domestic alternatives, through, for example:

- Joint development and/or use of cheaper sources of electricity, such as hydroelectric power schemes; or
- Establishment of an interconnector or a power pool that enables costs to be reduced by:
 - i. balancing peak demands over a wider area;
 - ii. maintaining lower reserve capacity as a result of the expanded access;
 - iii. enabling power stations and the network to optimise economies of scale.

To a degree such cost savings can be achieved through bilateral projects, but maximum benefits are only achieved through grid integration such as that in Western Europe. The power trade might take a number of forms:

- continuous sale of base load energy (as in the case above from Lao PDR to Thailand);
- short or long term sale of capacity to enhance reserve levels;
- “economic energy” exchanges to utilise the lowest marginal cost generating plant;
- emergency exchanges.

Additional cross-border benefits might include reduced emissions of greenhouse gases and other pollutants. Conversely, there may be negative externalities such as resettlement issues.

The main impact of R&B-C power investments on poverty reduction is indirect, through increasing the availability and reliability of electricity supply and /or reducing its cost. However, there can be a direct impact if, for example, it results in access to electricity for the poor in new areas. R&B-C power investments (rather than the services provided by the investment) might also benefit the poor directly, such as those in remote regions where international hydroelectric projects are developed (eg Lao PDR in Asia or Lesotho in Africa).

Constraints

There are a number of constraints that are particular to electricity R&B-C investments.

Political issues might include a reluctance (on the part of a net importer of power) to be dependent on another country for reasons of security of supply, or a reluctance (on the part of a net exporter of power) to export what is viewed as a strategic national asset. Governments might also want to give priority to expansion and interconnection of the domestic network before embarking on electricity trade with a neighbouring country. In West Africa, the implementation of the first phase of the WAPP has been affected by instability in the Ivory Coast, emphasising the importance of the political dimension of all R&B-C projects.

There are many **technical** issues, relating to standards and coordination in construction and operations that have to be resolved at the outset. Transmission protocols are essential.

Regulatory issues are also critical, especially the arrangements for pricing. For bilateral trade, regulatory issues can be resolved by governments (involving domestic regulators where they have been established), but for wider grid integration more formal arrangements may be necessary to provide participants with sufficient assurances on compliance. If private investment is sought, a structured regulatory regime becomes still more important, such as the Regional Electricity Regulatory Authority (RERA) in southern Africa. RERA was established in 2001 as a formal association with separate legal status. Each of the member economies of the Southern Africa Development Community (SADC) is entitled, through its energy regulatory arm, to a single membership. RERA cannot interfere with national mandates but works towards common regional rules relating to issues such as system operation, transmission access, transmission pricing and cross-border trading, and towards the establishment of a regional regulatory framework for market liberalisation.

The **institutional** constraints for cross-border investments are minor, but are of far more importance in regional projects such as power pools, for which suitable arrangements have to be in place for the effective operation and governance of the power pool.

B. Gas

Examples in South East Asia

The Trans-ASEAN Gas Pipeline is one of ASEAN's four long-term flagship projects for integrating infrastructure. The overall scheme is based on an evolutionary process, building on existing national grids and bilateral pipeline connections. The total length is some 4,500 km, and full development is targeted for 2020 at an estimated cost of \$7 billion (excluding drilling costs), with Indonesia as the main exporting hub. Six cross-border connections have been commissioned, and seven more are planned between now and 2016.

The perceived benefits of the pipeline are higher use of gas in power generation and by businesses that do not currently have access to gas, greater price competition among energy suppliers, the potential development of stranded gas fields, and a strengthening of political stability in the region through long-term supplier-customer relationships.

Examples in West Africa

Plans for a West African gas pipeline have been mooted for many years, based on the large availability of gas in Nigeria. After a number of studies, agreement was reached by the concerned heads of state in 1999 to proceed with a West African Gas Pipeline (WAGP) between Nigeria, Benin, Togo and Ghana, on a build-own-operate basis. Over the next four years agreement was reached on the legal, fiscal and regulatory framework, and a contract was signed between WAGP and the Takoradi power plant in Ghana (which is controlled by the Volta River Authority). Following an environmental impact assessment, construction started in 2004 and is due to be completed in early 2006. The WAGP is included in the top 20 projects in NEPAD's STAP.

The pipeline is 678 km long, and is being financed primarily by a consortium of private companies led by Chevron. However, financial risk mitigation is being provided by the World Bank through IDA and MIGA to enable the private consortium to raise the necessary finance and proceed with the project. The benefits are perceived to be:

- A reduction in energy costs and improved reliability in the energy systems in Ghana, Togo and Benin, with the gas being primarily used for electric power generation, but also by industry and commerce;
- A reduction in gas flaring in Nigeria and the use of environmentally cleaner fuels in Ghana, Togo and Benin; and
- Supporting economic and regional cooperation in West Africa.

Opportunities

The opportunities for gas pipelines clearly depend initially on the availability of natural gas in the region. Natural gas can serve as a direct energy source for power generation, and as a source of energy for industries and households. It has substantial environmental advantages over other fossil fuels.

It is unlikely that gas would be supplied directly to poor households, so that its impact on pro-poor growth and poverty reduction will generally be indirect. For gas exporting countries it can provide a valuable source of foreign exchange, while for importing countries it can provide cheaper (and often environmentally better) sources of energy, particularly for power generation.

Constraints

Since natural gas is a non-renewable resource, its export to neighbouring countries can raise acute **political** concerns. A prime example is the reluctance of Bangladesh to export gas to India despite strong pressure from Indian governments to do so.

The **technical** specifications have to be agreed in detail, as in the case of electricity, together with harmonised standards and protocols for construction, operation and maintenance, safety, and measurement, to ensure operational integrity. At the investment stage, the route for the gas pipeline can raise health, safety and environmental concerns at the national and local levels.

The **financial** arrangements can be complex because gas development, extraction and transport are very costly. A secure base demand is required to justify proceeding with a project in an area with no gas (typically provided by long-term contracts with power stations). Most successful cross-border gas pipelines involve private sector finance, which brings its own requirements.

There are also important **regulatory** issues, relating to pricing, access and use, health and safety, security of supply and emergency supply arrangements.

The **legal** requirements might include special matters such as:

- measures to secure transit rights (eg permits, licenses, consents or other authorisations), and the arrangements for compensation to transit states for the rights they grant as well as for property and risk;
- arrangements for abandonment to meet increasingly stringent environmental obligations; and
- the determination of jurisdiction over offshore segments of a pipeline, particularly those outside a state's territorial waters.

5. Opportunities and constraints in the communications sector

This section focuses on the information and communications technology (ICT) sector, comprising fixed and mobile telecommunications and data transfer.

Examples in South East Asia

The ICT sector in South East Asia has developed rapidly, if unevenly, across the region, strongly driven by rapid technological development, with the private sector playing an important role. Most R&C-B projects are focusing on relatively new technologies to improve accessibility and reliability and/or reduce cost.

In the GMS, the main focus has been on reducing the cost in the telecommunication sector, in order to enhance trade and production for rural communities. The GMS Telecommunications Backbone Project originally included 13 priority transmission links, but these were regrouped into two phased projects (Establishment of Backbone Telecommunications Networks Project, Phase I and Phase II) following an ADB-financed feasibility study, to speed up implementation and enhance the development impact. Phase I focuses on Cambodia, Lao PDR, and Vietnam, while Phase II focuses on Myanmar.

The main aims of the project are: to develop "backbone" transmission lines; to promote a secure and stable policy and regulatory environment to mobilise private sector investment; and to enhance implementation of telecommunications sector policy reform programmes and institutional strengthening. The transmission backbone will provide a modern high-capacity network based on optical fibre transmission systems.

Examples in West Africa

The ECOWAS and UEMOA networks have developed markedly with the liberalisation of policies on foreign investment, and West Africa enjoys the highest level of telephone connectivity of any sub-region in Africa. However, the system remains poorly developed by world standards.

Network development has been guided by the Pan-African Telecommunications Network (PANAFTEL) programme of the Organisation of African Unity and African Union, and ECOWAS Intelcom. PANAFTEL was designed to offer an entirely interconnected inter-state network with a wide range of options for routing facilities, but has failed to meet all its objectives. In ECOWAS, the initial design was to avoid reliance on outside operators for inter-state traffic, but only 3% of transit traffic relies on routing facilities within the sub-region, while the remainder uses Canadian, European and US operators. The situation in UEMOA is similar with few direct links between member states, heavy use of outside operators for inter-state traffic, and a wide range of tariffs for such traffic.

Progress is being made by ECOWAS on policy convergence that focuses on tariff and regulatory coordination. ECOWAS has drawn up convergence criteria aimed at establishing a regulatory framework with homogeneous technologies and equipment, and has established a group to develop criteria for the West African Regulators Association. ECOWAS has also developed a model for restructuring, liberalising and privatising the industry, which has formed the basis for policy reforms in almost all member states.

Opportunities

Technological advances are creating new opportunities to extend ICT services at affordable prices, and more generally to reduce costs. In some developing countries with unsophisticated infrastructure it may be possible to leapfrog to an advanced communications system. The Regional African Satellite Communications Organisation (RASCOC) is an example – see Box 3 below. RASCOC aims to extend an affordable telecommunications service to the entire population of Africa at an affordable price (particularly those in rural and remote areas) due to the economies of scale of satellite technology. RASCOC is included in NEPAD's STAP (together with ICT Policy/Regulatory Frameworks at the Regional Level).

ICT services can potentially have direct and/or indirect impacts on poverty reduction. Access to modern means of communication for the poor has the potential to bring a range of direct benefits such as access, in hitherto isolated areas, to knowledge (eg on markets, data on weather), engagement in wider communities, and education and skills development. The potential indirect benefits arise from reducing the costs, and/or increasing the range, of ICT services that provide an input into other service sectors including trade and finance.

Box 3 - Regional African Satellite Communications Organisation (RASCOC)

RASCOC was initiated in response to a feasibility study, adopted by African States in February 1991, which concluded that “a telecommunications satellite tailored to well-defined specifications is the best technological choice for satisfying Africa's telecommunications needs, globally and optimally”. Some 44 African states and telecommunications operators (including regulatory bodies) have signed the RASCOC Operating Agreement. In 2003 a decision was taken to begin the construction of the first RASCOC satellite system, which is expected to be launched in 2006. The project will be implemented through a strategic partnership on a build-operate-transfer basis.

The RASCOC system will offer a wide range of services to customers and to public or private telecommunication operators. Services include integrated telephony which seeks to offer universal access to telephony, fax, data transmission, internet access, sound/TV reception, and enabling rural and peri-urban areas to have access to telecommunication services at a lower cost. Other services include thin route trunking services, allowing direct interconnection at low or medium rates within the African continent and with Europe and Middle East. Finally RASCOC will offer transponder lease services, providing high rate links for sound and TV broadcasts.

RASCOC aims to:

- provide an affordable telecommunications service on a large scale to rural areas of the continent by using appropriate technology;
- improve and/or develop inter-urban communications in each country;
- establish direct links between all African countries without exception, thereby reducing the high transit costs of inter-state traffic through foreign operators;
- support international connectivity;
- provide facilities for radio and television broadcasting in each country, and enable the exchange of radio and television programmes between African countries;
- provide a range of other value added services such as voice, data, multi-media, tele-education, tele-medicine, video conferencing, etc.

Constraints

Political constraints vary by region, being more acute in Africa than in South East Asia. For example, PANAFTTEL failed to meet its objectives due to political diversity, concentration in some states on their domestic rather than the regional network, and cultural differences.

A major **technical** constraint is the existing "digital divide" between developed and many developing countries. Technical standardisation and harmonisation is also important to secure seamless roaming of telecommunications services, and to facilitate trade in telecommunications equipment and services.

On the **financial** side, the most relevant constraints are those that might prevent the mobilisation of private sector finance, which is the main source of finance for most communication infrastructure investments.

The establishment of a sound **regulatory** regime is essential to reap the full benefits of modern technology, and to attract private investment. Important regulatory issues include universal access, cost-related interconnection, non-discriminatory tariffs and prevention of other anti-competitive practices, use of spectrum, data security, and consumer protection.

6. Opportunities and constraints in regional water initiatives

There is a growing awareness among countries sharing major water basins that there are mutual benefits to be gained from increasing co-operation in the use and management of these basins, and mutual dangers from non-cooperation. A number of regional trans-boundary water initiatives have been launched in the past decade or two to design and implement a range of R&B-C programmes to achieve an equitable and sustainable utilisation of the basin's resources.

Example in South East Asia

The Mekong River Commission (MRC) is 10 years old this year, but its origins date back to 1957 when the Mekong Committee was formed. Progress in achieving cooperation in the Mekong River basin was interrupted for many years by conflicts in the region, but the MRC has now established itself as a relatively mature organisation, that has moved on from identifying and implementing projects to a programme approach. Its focus is now the monitoring and management of the river basin across a wide variety of functions and sectors (including basin development, water utilisation, environment, flood management, fisheries, agriculture & forestry, water resources management, navigation and tourism). The members of the MRC are the four countries sharing the Lower Mekong Basin: Cambodia, Lao PDR, Thailand and Vietnam. Further details are given in Annex E.

Example in Africa

One of the most important river basin programmes in the context of poverty reduction is the Nile Basin Initiative (NBI), which is summarised in Annex F. The Nile basin has enormous potential to foster regional, social and economic development through advances in food production, transport, power supply, industrial production, and environmental conservation. The NBI was established in 1999 by the governments of the ten riparian countries to seek out and implement the benefits of increased co-operation in the use of this rich resource on a sustainable basis. The NBI has a Shared Vision Programme (SVP) with a portfolio of basin-wide projects which all the riparian countries are involved in, and two Subsidiary Action Programmes (SAPs) which involve specific groups of riparian countries at sub-basin level (Eastern Nile and Nile Equatorial Lakes).

The SVP is intended to cover the cross-cutting themes to ensure an integrated and comprehensive approach to water resources development and management, and to serve as a catalyst for broader socio-economic development and regional co-operation. The SVP focuses on thematic projects addressing water resources, the environment, power trade, agriculture, applied training, communication and stakeholder involvement, and benefit sharing. The SAPs cover investment projects at the sub-basin level including irrigation and water use in agriculture, hydropower and power trade, watershed management, flood and drought management, and sustainable management of lakes and wetlands. NEPAD's STAP focuses particularly on the power sector potential.

Opportunities

Regional water initiatives such as the NBI are effectively forms of specialised RECs. They are multi-sectoral, and provide many and large opportunities for R&B-C infrastructure and quasi-infrastructure investments in a wide variety of areas, including:

- Conventional economic infrastructure investments:
 - i. irrigation canals,
 - ii. hydroelectric schemes and related power interconnections, and
 - iii. water pipelines;
- Quasi-infrastructure investments:
 - i. water transport;
 - ii. flood protection;
 - iii. sub-river basin management;
 - iv. watershed management;
 - v. environmental conservation; and
 - vi. fisheries and other natural resources programmes.

Successful regional water initiatives provide a large scope to manage river basins on an integrated basis offering mutual benefit at the national level to all riparian countries, compared with the alternative of each country pursuing national agendas that protect domestic interests.

Constraints

Regional water initiatives face many of the same constraints as other forms of REC (see Section 2), and their cross-sectoral nature raises other sector-specific constraints. The constraints referred to below are those that relate mainly to integrated water resource management (IWRM).

Water management and use is a source of **political** tensions, and even conflicts, between countries and neighbouring peoples. There is evidence of an emerging global water crisis that threatens livelihoods, especially in developing countries. Fresh water is a finite and precious resource essential for sustaining life and for economic development. Water also has multiple uses, so that there are trade-offs in its use. The issues and problems that arise cannot be resolved in isolation but only through an integrated approach, requiring mutual trust and collaboration. The MRC is a relatively cohesive group of 4 countries, but the building of trust between the 10 riparian countries in the NBI is proving to be a long and hard challenge. The potential rewards are huge, but there remain many obstacles to realise them.

The **technical** aspects of IWRM require access to reliable information, modelling and decision-making tools, and professional networking and knowledge-sharing at national and regional levels. One of the main constraints to the development and implementation of IWRM is the availability of data. The required data may be unavailable, inconsistent, scattered over many ministries in the countries concerned, and/or difficult to access due to national sensitivities.

Many of the **financial** issues centre on the sharing of the costs and benefits, and the development of cross-sectoral win-win situations. There can be a major role for donors, both to broker such solutions and to provide finance.

The **institutional** constraints can arise at both the regional and national level, as strong national institutions are an important element in achieving IWRM. At the national level, there may be a shortage of capacity to implement water sector policies, a lack of co-ordination across ministries and departments, or an absence of the necessary skills and experience. The programming of specific initiatives should be prioritised and focused to ensure that they are capable of being implemented. A shortage of capacity has been a major issue in the NBI.

7. General lessons to be learned

This final section brings together the main sector-wide conclusions to be drawn from the rest of the paper. It does not repeat the sector-specific conclusions covered earlier.

R&C-B infrastructure is part of a network

R&C-B infrastructure on its own is unlikely to have an impact on poverty, since most R&C-B investments are at the national and even the international level. R&C-B infrastructure can, however, provide new and major opportunities to reduce poverty, so long as appropriate complementary measures are taken at the domestic level. We assume that the detail of such measures will be discussed in other parts of the Guiding Principles, but give below the main bridge that needs to be built, for each of the main sectors covered in this paper, if the R&B-C investment is to have a poverty focus:

Sector	Bridge with a poverty-focused network
Roads	Intersections with the domestic road network
Railways	Stations and connections with other transport modes
Power	Electricity sub-stations
Gas	Off-take points
Communications	Extension of network to under-served areas
Irrigation	Off-takes from the main canal to the distribution system

Poverty links are different for cost-reducing and trade-creating investments

The links between R&C-B infrastructure and poverty reduction will depend on the primary motivation for the investment. Two fundamental categories can be distinguished:

- **Cost-reducing** investments, where the main aim is to provide an infrastructure service (eg electricity) at a lower cost than any domestic alternative (eg by exploiting economies of scale, or tapping a cheaper power source);
- **Trade-creating** investments at the regional or sub-regional level, which primarily applies to R&C-B transport investments (and possibly to a smaller extent communications).

This distinction is important because the issues raised by the two categories of investment are substantially different. **Cost-reducing** investments can broadly be approached in a similar way to corresponding domestic projects, except for the additional layers of complexity deriving from the involvement of more than one sovereign state⁷. Assuming that the R&C-B investment forms part of an integrated network, its impact on pro-poor growth and poverty reduction can have both direct and indirect impacts on poverty (using these terms in the sense described in Section 1 and Annex B) in the same way as similar domestic investments. For example, a cross-border interconnector

⁷ These extra layers of complexity add to the costs of cross-border infrastructure investments, and provide a cost advantage for domestic investments where they are feasible. Cross-border infrastructure investments are therefore potentially viable only if they bring additional benefits that are not achievable through national infrastructure investments, or yield additional cost advantages that outweigh the additional costs of the cross-border investment (compared with a comparable domestic investment).

might form part of a new rural electrification scheme, which both provides direct access to electricity for poor people, and provides additional opportunities indirectly through the growth in employment opportunities⁸.

Trade-creating investments raise a number of different issues, and their links with pro-poor growth and poverty reduction are more complex (see Section 3).

In broad terms, transport investments might be cost-reducing or trade-creating and are frequently both; energy investments are essentially cost-reducing; and communications are mainly cost-reducing (but can contribute to trade creation). Of the additional infrastructure sectors included in regional water initiatives, water supply pipelines are cost-reducing, and irrigation investments are best viewed in the “cost-reducing” category⁹ in the sense that the links between the investment and poverty reduction can be approached in the same way as similar domestic investments.

Integrate R&B-C investments into national planning

R&B-C infrastructure should be viewed in the context that a sovereign government’s first responsibilities are to its own people. The starting point should therefore be a good understanding of domestic infrastructure programmes, priorities and resources, and the potential domestic economic benefits of R&B-C infrastructure. If a R&B-C infrastructure investment is to have a good chance of reaching fruition, it is necessary to integrate national priorities with those of sub-regional or regional neighbours. An important related factor is to devise R&B-C schemes that create potential “win-win” solutions, or which at least align the costs and benefits of the main stakeholders. Donors might have a valuable role to play in strengthening the integration of regionally developed action plans within national planning systems, and helping to support moves to make such plans reflect priorities already set at the national level.

Guidelines for regional investments

Regional investments are, by definition, those that are mediated through RECs (Section 1). The measures that donors might take to strengthen and help empower RECs to undertake regional investments are discussed in Section 2. Some of the general lessons include:

- Work through a REC that has the necessary mandate and political support, providing capacity building assistance as required (mainly to improve the effectiveness of the REC to bring about changes in regulatory frameworks and other complementary areas without which the physical investment cannot yield its full benefits);
- Identify a suitable donor that can take a sponsorship role to help build trust between members, make the case for cooperation, and act as an honest broker;
- Co-ordinate donor assistance to ensure that all links and connections are implemented in a coherent manner, and to reduce the burdens on RECs of different approval processes and timetables;

⁸ Table B in Annex B summarises such direct and indirect impacts for most infrastructure sectors.

⁹ Although the primary aim of irrigation investments is typically to offer new or enhanced production opportunities, rather than to reduce costs.

- Provide bilateral donor assistance to multilateral development banks (eg through grant trust funds) to help design poverty focused project components that are linked with, and complementary to, the regional investment;
- Adopt flexible funding mechanisms for regional programmes to accommodate regional infrastructure investments (which applies especially to bilateral donors that are driven by national programmes and PRSPs, and have difficulty addressing regional issues);
- Exercise patience and perseverance, as regional projects are long-term commitments. The initial (highly political) period is concerned with building trust and confidence, but is necessary if the project is to have a reasonable chance of coming to fruition.

Regional investments are typically large, and aimed primarily at supporting formal sector economic development and facilitating trade at regional and international levels. The investment priorities that have the potential to generate the greatest and most tangible impact on pro-poor growth and poverty reduction include:

- In the transport, energy and communications sectors, give first priority to poor landlocked countries where the R&B-C infrastructure is in need of improvement; and second priority to other poor countries that would benefit most from increased trade creation, especially inter- and intra-regional trade;
- Improved transport is likely to be the main priority in such countries, and has the potential to be both cost-reducing and trade creating;
- Regional water initiatives also offer major opportunities to generate pro-poor growth and poverty reduction, especially irrigation investments;
- Assist with the integration of the R&B-C investment into national sectoral and expenditure plans, and assist in planning on a network basis to ensure that the improved R&B-C infrastructure connects with poor people.

Guidelines for cross-border investments

The main general lessons for cross-border investments include:

- Cross-border investments may generally be simpler to implement as they do not require mediation through a REC;
- Select opportunities where there is political harmony and trust between the two countries;
- Plan from the national level to identify potential R&B-C projects that can help the poor;
- Focus particularly on improving the provision of infrastructure services to remote areas that can be supplied more cost-effectively from a neighbouring country. Such investments are likely to be cost-reducing;
- Provide a sponsorship role to help build trust between members, make the case for cooperation, and act as an honest broker (especially in identifying a fair allocation of costs and benefits, and overcoming other sector-specific constraints).

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Annex A – Terms of reference

REGIONAL AND CROSS-BORDER INFRASTRUCTURE AND ITS ROLE IN TRADE, PRO-POOR ECONOMIC GROWTH AND POVERTY REDUCTION

Introduction

As part of the OECD DAC work on infrastructure and poverty reduction a short paper is to be commissioned on the role of regional and cross-border infrastructure in promoting trade, pro-poor growth and poverty reduction, and the opportunities and constraints in providing sustainable infrastructure that meets these objectives.

The purpose of the InfraPoor task team is to prepare – by spring 2005 – guiding principles leading to an enhanced and more effective pro poor donor approach towards economic infrastructure, thereby strengthening the international discussions on MDG and systemic poverty reduction. To this end, three workshops will discuss (i) the macro framework for infrastructure and donor investment (29-30 March 04), (ii) cross-cutting and technical issues in the key infrastructure sectors (i.e. transport and ICT, energy, and water, sanitation and irrigation) for pro-poor design of programmes and projects (27-29 October 04), and (iii) guiding principles for donors (bilateral and multilateral alike) to be more effective on poverty reduction through infrastructure investments (22-24 March 05). The objective of the InfraPoor Task Team is to formulate – in the context of the new discussion on the MDGs -- a joint position of DAC members to enhance the impact of economic infrastructure on pro-poor growth. The output of the work of the InfraPoor Task Team will be guiding principles for the bilateral donor community to enhance the contribution of infrastructure to pro-poor growth and the MDGs.

Objectives of this study

A short paper for donors and policy makers on the opportunities and constraints for the provision of sustainable regional and cross-border infrastructure, together with recommendations for more effective provision in pursuit of pro-poor growth and poverty reduction. This paper will provide inputs to the draft of the Guiding Principles for Donors on Poverty Reduction and Pro-poor Growth through Economic Infrastructure. It will also serve as a reference document for discussions at the third Infrapoor workshop to be held in Tokyo 20 -24 March.

Context

Regional infrastructure can support the integration of national economies, draw out comparative advantages of different regions, create economies of scale and strengthen networks for trade, growth, security and social development. This can be significant for land-locked, with low trade volumes and resource poor countries.

Additionally at a more local level, cross-border infrastructure between neighbouring countries can increase access to services and livelihoods opportunities and increase security for populations located in border areas. Often these areas are remote, occupied by minority groups, and are underserved by infrastructure services provision planned at national levels.

In both cases there are barriers to the development and maintenance of effective infrastructure. Regional policies are often poorly articulated and inconsistent, regional institutions are often of low capacity and do not have a legal mandate to take forward cross-border initiatives; organising financing and synchronising procurement and design standards is time consuming. These issues often act as disincentives for private sector pipeline development.

At the local level, there may be no effective coordination mechanisms for developing cross-border infrastructure and low priority place on such initiatives by national governments. Complementary measures in addition to hardware are often required such as adequate maintenance and management systems, harmonised customs procedures and cross-border controls.

There are many different types of regional infrastructure with different balances in the sharing of costs and benefits (for example transport from landlocked countries requires different arrangements to those for power pooling). These affect the political agreements, implementation arrangements and incentives for Government and donor finance.

At the same time, donors, both bilateral and multilateral, are not well structured to support regional projects. The bulk of ODA funding is often tied up in country programmes with little resources, both human and financial available for supporting regional work. And yet a number of successful initiatives have been undertaken. The study will explore the different factors that facilitate and constrain suitable regional and cross-border infrastructure projects and offer practical guidance to better ways of supporting suitable initiatives.

Scope of Work

Undertake a desk-study of the experiences to date on implementing regional and cross-border infrastructure works and their impact on pro-poor growth and poverty reduction. A number of recent reviews and papers provide a good starting point¹⁰. Other relevant papers will be identified and analysed.

Interviews will be undertaken with a limited number of representatives from donor organisations and regional organisations. To provide a focus to the work, it is suggested that the regional work is limited to two regional economic communities in Africa, and the South Asia region. Similarly for remote cross-border contexts one locality for Africa and another for Asia (possibly China with Myanmar). Infrastructure considerations will primarily be limited to transport, communications and energy, although important regional trans-boundary water initiatives should be considered, such as the Nile Initiative, particularly where these have wider development potential.

The opportunities and constraints will be characterised and recommendations formulated for donors on practical measures to promote pro-poor growth and poverty reduction through effective regional and cross-border infrastructure. To assist in this it would be useful to consider, inter alia, questions such as :

- What is the contribution of regional and cross-border infrastructure to pro-poor growth and poverty reduction? Distinguish between large-scale regional infrastructure and (smaller-scale) cross-border initiatives.

¹⁰ Regional Audit of Institutions in Asia; P Balogun; 2003;

Infrastructure and the MDGs, and Infrastructure and Pro-poor Growth, two papers for the OECD DAC Infrastructure and Poverty Reduction Task Team, C Willoughby; 2004 Other papers prepared for the previous two POVNET workshops should also be considered;

Toward a Systematic Approach to regional Integration in the Africa Region; World Bank; 2004;

Assessing Regional Integration in Africa; UNECA; 2004

A Review of the Preparation and Implementation of NEPAD Infrastructure Projects in West Africa; 2004

- What are the factors that ensure that regional and cross-border infrastructure investments contribute to pro-poor growth and poverty reduction (bring about better service delivery to the poor, bring benefits to local communities, contribute to growth of pro-poor economic sectors, contribute to increased local employment and resource use, etc)?
- What are the difficulties in ensuring a pro-poor focus to regional and cross-border infrastructure, and how can these be overcome? Balancing sustainability with a pro-poor focus may be a major issue.
- How can the promotion of increased trade through regional infrastructure be made pro-poor?
- As there is evidence that (some) large-scale regional infrastructure investments produce negative social, economic and environmental impacts, how can potentially negative impacts (economic, social, cultural, environmental) be identified and avoided? Lack of transparency and civil society participation are often cited as particular problems of large-scale infrastructure initiatives.
- What role should/could donors play to ensure a pro-poor focus to regional and cross-border infrastructure initiatives? What are the implications for donor support and coordination of improving the poverty reduction impact of regional and cross-border infrastructure investments? What are the examples of effective donor support, i.e. that have clearly made regional and cross-border infrastructure initiatives pro-poor?
- Are there any emerging patterns or implications for financing, political agreement and institutional arrangements (such as the balance of public or private use, bilateral or multi-country focus) for the different types of regional infrastructure (such as transport, energy or water)?

Deliverables and Inputs

It is envisaged that an early draft paper will be prepared in time to inform to contribute to the drafting of the DAC Task Team Guiding Principles¹¹, a first draft of which is due to be circulated to the Infrapoor core team of donors for comments by 11 February.

The consultants should be available to dialogue with the editor of the Guiding Principles in producing the final draft for this section of the work and for incorporating the core team comments and finalising the study paper for circulation prior to the Tokyo workshop by 14 March. This paper should not exceed 12 pages, excluding any annexes.

It is envisaged that an economist with experience of infrastructure development, regional trade and pro-poor growth, together with an infrastructure specialist will form the core of the study team. Other specialist inputs may be drawn as required. The team should be available to start work immediately. A total input not exceeding 15 days is envisaged to complete this main task. Provision will be made for up to an additional 5 days of inputs to be agreed for any follow up work. The expenses such as international communications (email and telephone, report production and a possible briefing meeting in DFID but no international field work) should be included in the lump sum. The draft and final reports are only required to be submitted in electronic format (Word).

¹¹ For guidance the Annotated Outline for the Guiding principles (dated 17 December is attached).

Annex B – Direct and indirect impacts of infrastructure on poverty

The following is an extract from a paper prepared by Stephen Jones, OPM, in October 2004, entitled “Contribution of Infrastructure to Growth and Poverty Reduction in East Asia and the Pacific”, for the ADB/World Bank/JBIC Flagship Study on Infrastructure in East Asia and the Pacific:

Direct and Indirect Impacts of Infrastructure

The impact on the poor of improved infrastructure services may be defined as direct or indirect, according to whether it derives from the use of the services (participation in the market) by poor people themselves, or by others (such as potential investors whose activities may create jobs). It is also important to distinguish the time-frames under which impacts are likely to occur since in many cases it is reasonable to expect that lags will be extremely long.

The direct or indirect impact of the service must also be distinguished from the impact of the investment itself (both the initial investment and its maintenance). The main positive direct impact of an infrastructure investment is likely to relate to the creation of employment opportunities. Negative direct impacts may be environmental or social. Indirect impacts from the investment are likely to relate mainly (a) to multiplier effects that may affect employment and (b) the fiscal impact of the investment.

The extent of the direct impact on the poor as consumers of infrastructure services will depend on:

- The extent to which access to services is improved, costs reduced and quality improved – which depends both on the infrastructure investment and the operation of the market for the services provided. Typically some form of alternative competing service provides a benchmark (e.g. purchase of water from private vendors or wells, the use of wood, batteries or gas containers as energy sources compared to mains electricity or gas).
- The extent of opportunities that are opened up by improved infrastructure access. In particular, the potential labour market to which poor people have access may be enlarged (by improved transport and communications). This may facilitate permanent or temporary outmigration and the provision of remittances to family members remaining in the home area, or allow longer-distance commuting to employment.
- The terms of access and cost of the services that the poor face. Typically there are important economies of scale in the provision of infrastructure services to households or communities (relating in particular to the need for particular equipment for users and the costs of monitoring use of the service), so that on fully economic pricing, the unit costs faced by the poor for service use will be higher than those faced by richer users. High upfront connection charges may be a particular deterrent to access.
- The income elasticity of demand for the service (and its current share in the expenditure patterns of the poor). More generally, particular sub-groups of the poor in different contexts are likely to have different needs for, and current use of, infrastructure services.

While all the poor are potential direct consumers of infrastructure-related services, some of the poor are also producers of closely competing services (e.g. water carriers, porters). Some groups

among the poor may therefore lose livelihood opportunities, at least in the short-term, as a result of increased competition in the markets in which they are sellers.

The indirect impacts of improved infrastructure service provision on the poor are mediated through other markets. In some of these markets, poor people are purchasers. For example, improved road transport may lead to falls in the price of staple foods and consumer goods imported to the region that are purchased by the poor. Reduced energy costs may lead to falls in the price of locally manufactured goods that are purchased by the poor. The willingness of service suppliers such as doctors and teachers to locate in an area may also be positively affected by improved infrastructure.

The deeper and more long-term impact will depend on the impact on markets in which the poor are sellers – of goods and services that they produce (particularly for agricultural producers), but most fundamentally of their labour. The impact of improved infrastructure service provision on the demand for the labour of the poor locally will depend on its boosting the productivity of investment in the areas where the poor are located (or to which they have access), through both lowering input costs and expanding the potential market. This impact will not necessarily be positive at least not in the short-term – for instance improved transport links (particularly if not linked to other forms of infrastructure investment) might lower the cost of bringing goods into the area that compete with local products and thereby undermine local employment. For example, a vicious circle may be conceived where improved transport infrastructure undermines local production and reduces the cost of supply of goods, encouraging out-migration of the most talented and dynamic workers and a remittance-based economy for those who remain. Such a development might be associated with severe clusters of poverty among those without access to remittances or the resources or skills to migrate. Improved transport and communications may also expose isolated communities to cultural influences with which they may be poorly equipped to cope, while patterns of the development of HIV/AIDS epidemics have often been closely linked to major transport routes.

In the longer-term, this indirect mechanism through the creation of labour market opportunities (as part of a broader process of economic growth) is likely to be the most important. However it is much more difficult to measure this and to isolate the impact of specific infrastructure investments on poverty than is the case for most direct impacts, for several reasons:

- Indirect impacts (even more than direct impacts) depend on the complementarity of infrastructure investments. An improved road without power or communications infrastructure may have little effect in improving the productivity of investment in a remote location.
- Wider considerations relating to the investment environment (macroeconomic management, governance, international market developments) will also impact on investment decisions affecting labour demand.
- The scope for poor people to take advantage of employment and other economic opportunities will also depend on their human capital in terms of health and education status.

A further indirect channel links infrastructure to poverty through the public finances. Two links determine this. First, the public finance impact of infrastructure investment and service provision decisions (for example to cover the capital cost of public investments and subsidies for service provision), and conversely the impact of changes in the overall fiscal stance on public infrastructure investment levels and composition. Second, the impact of changes at the margin in the public finances (principally expenditure) on the poor. To the extent that infrastructure provision is dependent on public financing, governments will face a sharp trade-off between expenditure on

investment or subsidies related to infrastructure, and spending in other areas with potential poverty impact such as education and health. The size of the fiscal impact of infrastructure spending depends in part on its accounting treatment, particularly in the case of countries operating against ceilings on variables like the overall fiscal balance. IMF (2004a) notes the concern that approaches to fiscal policy that focus on the overall fiscal balance and gross public debt may excessively constrain productive public investment. IMF (2004b) by contrast notes that standard accounting treatments of Public-Private Partnerships may understate the fiscal implications of these arrangements, particularly in cases where the public sector continues to bear a considerable portion of the risk. As noted in Section 4C below, the burden of fiscal adjustment in practice tends to fall more than proportionately on public infrastructure investment with a potentially severe impact of growth and poverty.

Figure B shows the main causal linkages that are relevant to identifying the direct and indirect impacts of infrastructure investment and services on the poor. Government regulatory and financial policies impact on infrastructure investment decisions and the market for infrastructure service, as well as on enterprises that use the services and on poor people, while the infrastructure policies and decisions also impact on government finances.

Figure B - Summary of Conceptual Framework

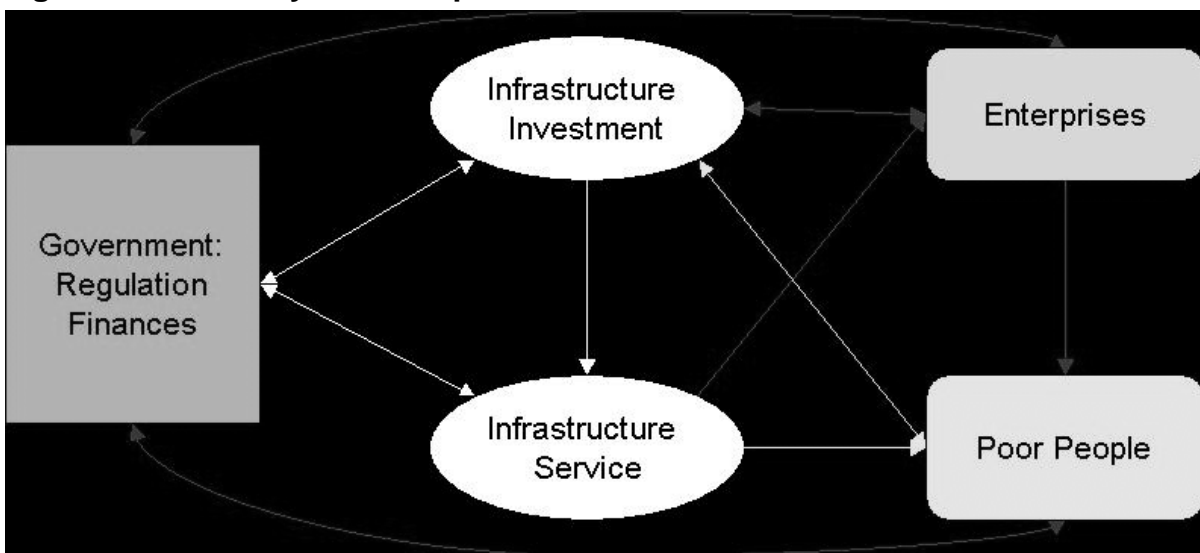


Table B provides a preliminary and summary representation of the major direct and indirect (positive) impacts of infrastructure service on the poor excluding those related to public finances that depend mainly on subsidy policies. Several general points can be made that set the scene for more detailed discussion of issues within the region:

- In terms of direct impact on the poor, water and sanitation services (mainly through their impact in improving health outcomes), roads, ICT and electric power are likely in general to be of the greatest significance.
- Indirect impacts are more difficult to assess and highly context-specific, but depend on the growth and employment generation impact – in the short-term in particular on the types of investment that are facilitated in relation to their demand for labour.

- ICT, electric power and road transport are likely to be of particular significance in relation to wider empowerment-based concepts of poverty.

Table B - Potential Positive Impacts of Infrastructure Services on the Poor

Sector	Direct Impact on Poor	Indirect Impacts on Poor
(Electric) Power	Mainly for lighting, TV, radio at low levels of income. Heating, cooking, appliances for self-employment at higher levels of income	Reduced energy costs for enterprises encouraging employment creation across wide range of activities Improved health and other services (refrigeration, lighting etc) Improves ICT access
Piped gas	Limited impact at low income levels Heating, cooking at higher levels of income	Reduced energy costs for enterprises encouraging employment creation (limited range of activities)
Roads	Access to employment and markets Access to services (health, education)	Reduced transport costs and improved market access for enterprises and service providers, lowering costs of serving remote communities
Railways	Limited	Reduced costs and improved market access for enterprises
Ports	Limited	Reduced transport costs for enterprises encouraging employment creation (e.g. bulk commodities like agriculture)
Airports	Limited	Reduced transport costs for enterprises encouraging employment creation (high value low bulk commodities, and services)
Information and Communications Technology (ICT)	Better communication access, aiding migration, information on opportunities, access to knowledge and potential engagement in wider communities	Employment creation through improved knowledge of markets, reduced management supervision costs, access to wider knowledge base
Water	Improved health outcomes	Limited
Sanitation	Improved health outcomes	Improved health outcomes (e.g. reduced pollution by non-poor households and others)

Annex C – ECOWAS

The leaders of West Africa agreed at their May 2002 Yamoussoukro Summit that the ECOWAS Secretariat should be designated as the regional focal point for the implementation in West Africa of NEPAD infrastructure investment proposals, and specifically for NEPAD's STAP. A review by the NEPAD Secretariat of STAP implementation, carried out one year after its launch (in May 2003), identified a number of institutional and operational barriers hampering efficient project implementation. Among the main issues identified were the:

- inadequacy of current institutional arrangements at the national level;
- insufficiency of specialised skills and resources within the RECs (including ECOWAS) to structure complex projects;
- limited amounts of regional funding; and
- reliance on development agencies' internal systems and processes for project cycle management.

Due to continuing slow progress in the implementation of the STAP, the ECOWAS leaders decided in March 2004 to appoint a Task Force to identify bottlenecks and to make recommendations to improve implementation processes and the mobilisation of resources. The main findings of the Task Force are summarised below.

The bottlenecks

The consultants identified two different levels of institutional and management bottlenecks and barriers that impede timely implementation of ECOWAS infrastructure projects: macro-level and project-level.

At the **macro-level** the main bottlenecks are:

- An **inefficient decision-making process** that is lengthy and complex, with an inadequate framework and legal instruments to underpin it, and chronic delays in ratification;
- The **absence of ratification and enforcement at the national level** of treaties, conventions, protocols and programmes adopted by ECOWAS, largely due to the non-binding nature of decisions on Member States and a lack of any visibly working enforcement and sanction mechanism;
- **Institutional weaknesses** in ECOWAS to deliver results on specific infrastructure projects, rather than its more traditional role of coordination and harmonisation. A further institutional issue is a degree of duplication between ECOWAS and UEMOA;
- **Poor liaison between ECOWAS and Member States**, due in part to overlapping responsibilities between ECOWAS liaison desks which had been established in some Member States and new national NEPAD focal points that have been set up in all States following a decision made at the May 2002 Yamoussoukro Summit;

- **No clear guidelines for private sector participation** which is thought to be holding back the implementation of some projects, particularly in telecommunications and transport;
- **Shortages of funding** at various levels: inadequate capital resources for ECOWAS, including the non-payment of contributions; the complexities of donor funding which are often long and inflexible; and constraints on private sector financing due to a shortage of equity finance, and the high cost (and risk) of project development;
- **Ineffective communications strategy** resulting in poor communication with existing and potential stakeholders, and a failure to deal with entrenched views of interest groups that want to retain the status quo.

At the **project-level** the main bottlenecks are:

- An **inflexible project approach to project concept and definition** that tends to be led by legal and regulatory issues to the exclusion of commercial considerations (that could attract the private sector) and of alternative technological solutions that might be preferable; and/or the skewing of a project in the search for funding from a particular donor; and/or a failure to integrate the existing knowledge base in the project definition;
- **Long and complex project decision-making processes** that may be appropriate initially to secure regional buy-in, but are inadequate for action-oriented project implementation;
- **Inadequate project implementation teams** in ECOWAS – and to some extent in Member States and the donor community – due to a shortage of staff or the right skill-set;
- **Fragmented project funding** due frequently to multi-donor involvement, each donor having its own approval processes, so that project preparation is a huge and lengthy process;
- **Weak project management, MIS and accounting tools** in ECOWAS;
- **Inefficient IT infrastructure and working practices** in the ECOWAS Secretariat.

Recommendations

Recommendations were made under the following headings:

- Decision making processes, and the implementation and enforcement of ratified decisions;
- Capacity constraints;
- Funding mobilisation; and
- Institutional weaknesses.

The recommended measures to improve the **decision-making processes** are to transform ECOWAS's Council of Ministers into a supra-national institution vested with powers to enact regulations and directives applicable to and binding on the Member States, and to consider a legal framework under which sanctions could be imposed in the event of failure to implement ratified decisions.

The recommended measures to address the **capacity constraints** are:

- To separate regional sector policy formulation from the function of development and execution of projects;
- Create a dedicated project development and implementation unit jointly owned by ECOWAS and UEMOA. Its role would be to help achieve the fast and efficient development of infrastructure projects, as well as to develop stable long-term relationships with the private sector. Three different models are set out for the organisation of the unit.

The recommended measures to address the **funding bottlenecks** are:

- Press for unpaid contributions to be made, and set aside a proportion of these levies to fund the preparation of infrastructure investments;
- Improved co-ordination by donors of their support for infrastructure projects;
- Rationalisation of internal procedures to address better the challenges of infrastructure projects in the region; and
- The establishment within the RECs of a project development and implementation unit as outlined above.

The recommended measures to address the **institutional weaknesses** are to:

- Adopt a structure for an effective working relationship between the RECs and Member States to avoid duplication of effort, and to adopt a common position when dealing with donors on regional projects;
- Strengthen the harmonisation within Member States of the bodies dealing with the RECs; and
- Put in place an effective communications strategy with all existing and potential stakeholders.

Annex D – Greater Mekong Sub-region¹²

The Greater Mekong Sub-region (GMS) provides perhaps the benchmark for successful sub-regional and cross-border cooperation in South East Asia. Over the 12 year course of its existence, it has steadily evolved from a disparate collection of wary neighbours into a highly effective collaboration that can now point to numerous infrastructure investments directly attributable to the GMS initiative. It has accomplished this with a largely informal approach; GMS operates on a self-selection formula of “6 – x”, meaning only those who choose to involve themselves in any particular undertaking are bound by that agreement. Those who “opt-out” are not pressured to participate nor do they constrain those who wish to proceed within their own territories. This approach contrasts with that of ASEAN which prefers unanimity, for which some have faulted it as functioning essentially at the pace of the slowest or the least persuaded of its ten members.

With ADB serving as Secretariat, GMS members have adopted nine priority sectors: transport, telecommunications, energy, tourism, human resources development, environment, agriculture, trade, and investment. Specifically regarding infrastructure, individual sub-regional fora have been established for electric power, telecommunications, and transport. Traversing the sub-region and reflecting the primary transport routings, five economic corridors (two North-South; one East-West and two Southern) have been identified, several road investments are underway within these corridors, and feasibility studies are addressing prospective railway improvements. Plans for regional power interconnections and a telecommunications backbone have also been drawn up.

It is important to note that while external infrastructure funding has been substantial, there has also been an impressive employment of resources from within the sub-region. Examples include the Theun-Hinboun hydroelectric power project with Thai government, private sector and ADB participation which enables Lao PDR to supply energy to Thailand, and the North-South road corridor with the PRC and Thai governments funding their respective road portions as well as providing loans/grants to Lao PDR for segments of the intervening transit road. In this latter case, multilateral (ADB) involvement in actual project funding was required for only a relatively short remaining transit link through Lao PDR. The working relationships that have been engendered through GMS have also contributed to separate bilateral and multilateral initiatives. Examples of cooperative ventures involving member states but independent of the GMS umbrella include the Emerald Triangle Tourism initiative (Cambodia/Lao PDR/Thailand) and the upper Mekong navigation plan (Lao PDR/Myanmar/PRC/Thailand). All these financial collaborations are clear illustrations that the member states see individual as well as collective benefits from R&B-C projects.

¹² This annex is based largely on a draft report by Michael Bennett “Regional Integration through Cross-border Infrastructure – Where’s the Potential?”, August 2004

Annex E – Mekong River Commission

The origins of the Mekong River Commission (MRC) lie in the middle of the 20th century when the newly independent nations of Cambodia, Laos and Vietnam were established. The “Mekong Committee” was formed in 1957, supported by the UN Economic Commission for Asia and the Far East, to develop what was regarded as one of the world’s great “untamed rivers”. Many valuable studies were conducted but solid progress was delayed by conflict in the region. The MRC was created in 1995 with the signing of the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, between the four countries sharing the Lower Mekong Basin: Cambodia, Lao PDR, Thailand and Vietnam.

The role of the MRC, as described in the 1995 Agreement, is "to promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well-being." The MRC fulfils this role by implementing strategic programmes and activities and providing scientific information and policy advice, rather than through large projects. The MRC has a broad mandate covering areas such as flood management and mitigation, fisheries, agriculture, navigation, tourism, and consultation regarding water use and diversions.

The MRC is governed by its four member countries through the Joint Committee and the Council. The Joint Committee meets two to three times a year to approve budgets and strategic plans. It comprises one member from each country, who is usually a senior civil servant heading a government department. The Council meets once a year, and comprises a cabinet minister from each country. Technical and administrative support is provided by the MRC Secretariat in Vientiane, Lao PDR. The MRC is funded through member country contributions and international development aid agencies.

In 2000, the structure of the MRC was changed from a sectoral to a cross-cutting functional structure to support a progressive shift away from sector programmes and project execution to a longer term programme approach. In the longer term the main focus of the MRC is intended to be the monitoring and management of the Mekong River Basin in order to have the capacity to respond appropriately to political, economic and social changes in the basin.

The MRC programmes are now grouped under 3 categories:

- **Core Programmes:** Basin Development Plan, Water Utilisation Programme, Environmental Programme, and Flood Management & Mitigation Programme;
- **Support Programmes:** Integrated Capacity Building Programme;
- **Sector Programmes:** Fisheries Programme, Agriculture, Irrigation & Forestry Programme, Water Resources Management Programme, Navigation Programme, and Tourism Programme.

Annex F – Nile Basin Initiative

Overview of the Nile Basin Initiative

The Nile Basin Initiative (NBI) was formally established in 1999, by the governments of the ten Nile River riparian countries that share the Nile river and its tributaries. These countries are Burundi, Democratic Republic of Congo, Egypt, Eritrea (currently participating in the NBI as observers), Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda. The NBI provides for a cooperative framework through which to develop and share the benefits of the Nile among the 10 countries. The NBI moves beyond the notion of sharing quantities of water to sharing benefits that can be derived from the Nile, including increased agricultural and power production and trade, as well as improved environmental and water resources management and more productive fisheries.

There are two main programmes under the auspices of the NBI:

- The Shared Vision Programme (**SVP**) which is a basin-wide set of projects which all the riparian countries are involved in; and
- Subsidiary Action Programmes (**SAPs**) which involve specific groups of riparian countries at sub-basin level. There are two SAP programmes:
 - i. the Eastern Nile Subsidiary Action Programme (**ENSAP**), and
 - ii. the Nile Equatorial Lakes Subsidiary Action Programme (**NELSAP**).

The Shared Vision Programme

The basin-wide SVP comprises seven thematic projects:

- Nile Trans-boundary Environmental Action
- Nile Basin Regional Power Trade
- Efficient Water Use for Agricultural Production
- Water Resources Management and Planning
- Confidence-building and Stakeholder Involvement
- Applied Training
- Socio-economic Development and Benefit-sharing.

In addition, there is an eighth “project” to strengthen the capacity of the NBI to execute basin-wide projects and ensure effective oversight and co-ordination of the programme. The costs of the SVP have been estimated at \$130 million. A Nile Basin Trust Fund has been established, administered by the World Bank, to provide donor funding for the SVP, with support from both bilateral donors and international financial institutions. The first project to be started is the Nile Trans-boundary Environmental Action project, which is being funded by UNDP, the Trust Fund, and the World Bank (from its Global Environment Facility).

NELSAP

The Nile Equatorial Lakes (NEL) sub-basin includes the headwaters of the White Nile. The countries participating in NELSAP are those who share this sub-basin, together with the countries to the north, namely Burundi, Democratic Republic of Congo, Egypt, Kenya, Rwanda, Sudan, Tanzania and Uganda. There are strong hydrological and environmental interactions between the individual hydrological units within the sub-basin, and its water resources are central to the conservation of unique natural ecosystems, and to the welfare of its people. The economies in the region are characterised by a dependence on rain-fed agriculture, subsistence farming, low industrialization, poor infrastructure, high population growth, and poverty. Environmental threats to the sub-basin include overgrazing, poor crop cultivation practices, removal of vegetation cover, and uncontrolled development along lake shores and river banks.

The objective of NELSAP is “to contribute to the eradication of poverty, to promote economic growth, and to reverse environmental degradation”. Specific projects have been identified in a highly consultative manner, targeting investments in Agriculture Development, Fisheries Development, Water Resources Management, Water Hyacinth Control, and Hydropower Development and Transmission Interconnection. Further details are given below.

i) Two on-the-ground investment programmes:

- **Efficient Water Use in Agriculture:** a coordinated multi-country programme with direct benefit to poor subsistence farmers, through improved productivity by investments in rainwater harvesting and water conservation techniques, small scale irrigation, and livestock management. Efficient water use will be promoted to alleviate the major environmental threats of erosion, soil fertility loss, and sediment in streams and rivers.
- **Power Development and Trade:** infrastructure consisting of small-scale hydropower development, and strengthening transmission interconnections between several pairs of countries. The programme consists of six projects that will provide (i) the near term prospect of alleviating power shortages, probably the most important existing constraint on economic growth in several of the riparian countries, and (ii) the medium term prospect of leading to rural electrification programmes. The power projects have been the subject of significant preparation work, which has projected high levels of economic return for most or all of the individual projects. It is planned to ensure acceptable environmental and social impacts for the hydroelectric projects, and to put in place sustainable power sales arrangements in close coordination with the SVP programme to promote power trade.

ii) Two natural resource management programmes. These programmes represent the first serious attempts to come to grips with threats to both the environment and peoples' livelihoods, in two specific "hotspot" areas:

- **Lake Albert and Edward Fisheries:** the management of the fisheries industry through inventories of fish stocks and investments in fishery management components, and the improvement of the living conditions of the people of the fishing communities through investments in micro projects such as control of water hyacinth; and
- **Water Hyacinth Abatement in the Kagera River Basin:** investment in controlling the serious threats of water hyacinth to the use and development of the water resources of the basin, and to the aquatic environment.

iii) A water resource management and development programme. This programme consists of three projects, dealing with serious existing problems in small to medium river basins within the NEL sub-region and shared by two or more riparian countries. It will support the development of new and effective mechanisms of joint water resources management and planning, and the provision of the hydrological infrastructure necessary for management decision-making. These activities will lay a common ground for future national and international investments in water resources development. The projects focus on the creation of an enabling environment for investments and are planned to be "fast tracked" to reach that objective.

- **Development of a Framework for Cooperative Management of the Mara River Basin** to prepare for sustainable investments on a national and international level. The basin is shared between Tanzania and Kenya and is the site of conflicting development, and of two of the world's great wildlife parks;
- **The Kagera River Basin Integrated Water Resources Management Project** is shared between Burundi, Rwanda, Tanzania, and Uganda, and is the site of much land degradation, and of important development opportunities such as the Rusumo Falls Hydropower project. A coordinated framework is needed to realise these shared development opportunities; and
- **The Sio-Malaba-Malakisi Water Resources Management Project** to alleviate development and use conflicts between communities using the water resources of these three adjacent basins fed from the slopes of Mt. Elgon, and shared between Uganda and Kenya. A joint management framework is needed in order to deal effectively with the competition for water for grazing cattle that has been the cause of intermittent trans-boundary conflict between peoples in the Malakisi Basin. The project includes small-scale investments for domestic and livestock water supply.