



**Promoting
Pro-Poor Growth**

INFRASTRUCTURE

OECD



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This report is an extract from the publication
Promoting Pro-Poor Growth: Policy Guidance for Donors
which is composed of 5 parts:
Key Policy Messages; Private Sector Development; Agriculture; Infrastructure
and Harmonising *ex ante* Poverty Impact Assessment



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Foreword

*P*romoting pro-poor growth – enabling a pace and pattern of growth that enhances the ability of poor women and men to participate in, contribute to and benefit from growth – will be critical in achieving a sustainable trajectory out of poverty and meeting the Millennium Development Goals, especially the target of halving the proportion of people living on less than one dollar a day. Developing and sharing good practice in advancing this agenda has been the focus of the Development Assistance Committee (DAC) through its Network on Poverty Reduction (POVNET) since 2003.

The DAC Guidelines on Poverty Reduction, published in 2001, show that poverty has multiple and interlinked causes and dimensions: economic, human, political, socio-cultural, protective/security. The work of POVNET since then has given priority to addressing strategies and policies in areas that contribute to pro-poor economic growth, with particular attention to private sector development, agriculture and infrastructure. POVNET has sought to build consensus on the key underpinnings of pro-poor growth and to explore recent thinking on risk and vulnerability and ex ante poverty impact assessment.

Insufficient, inadequate economic infrastructure is among the most pressing obstacles to achieving pro-poor growth. The need for increased investments in infrastructure and for making infrastructure management and maintenance more efficient is widely recognised. Infrastructure is now a priority on the international development agenda; it was a major issue at the September 2005 UN Millennium +5 Summit, as well as a central theme of the March 2005 report by the Commission for Africa. Donors are re-evaluating the priority infrastructure should have in their programmes.

Yet major questions remain. What is a sustainable level of investment in infrastructure and to what standards of quality and design? How should infrastructure investments be funded, managed and maintained? How to maximise infrastructure's contribution to pro-poor growth? How can such investments be used to benefit poor people? These issues were considered by POVNET's Task Team on Infrastructure, drawing on the expertise of bilateral and multilateral donors, partner countries, private actors and civil society members. By identifying weaknesses in earlier donor approaches, four guiding principles on using infrastructure to reduce poverty have been developed:

- i) Use partner country-led frameworks as the basis for co-ordinated donor support.
- ii) Enhance infrastructure's impact on poor people.
- iii) Improve management of infrastructure investment, to achieve sustainable outcomes.
- iv) Increase infrastructure financing and use all financial resources efficiently.

This report elaborates these guiding principles and their application to various infrastructure sectors, including transport, energy, information and communication technology, and water, sanitation and irrigation. This framework and its findings should help broaden consensus among donors on how best to enhance infrastructure's contribution to economic growth and poverty reduction.



Richard Manning
DAC Chair



Hitoshi Shoji
Chair, POVNET Task Team on Infrastructure

In order to achieve its aims the OECD has set up a number of specialised committees. One of these is the **Development Assistance Committee**, whose members have agreed to secure an expansion of aggregate volume of resources made available to developing countries and to improve their effectiveness. To this end, members periodically review together both the amount and the nature of their contributions to aid programmes, bilateral and multilateral, and consult each other on all other relevant aspects of their development assistance policies.

The members of the Development Assistance Committee are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, the United States and the Commission of the European Communities.

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Acronyms

ADB	Asian Development Bank
AdI*	<i>Aguas del Illimani</i>
AFD*	French Development Agency (<i>Agence française de développement</i>)
AKFED	Aga Khan Fund for Economic Development
BLT	Build-lease-transfer
BOT	Build-operate-transfer
BOOT	Build-own-operate-transfer
BMZ*	German Ministry for Economic Co-operation and Development (<i>Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung</i>)
CEPA*	<i>Comision Ejecutiva Portuaria Autonoma</i>
CIDA	Canadian International Development Agency
DAC	Development Assistance Committee (OECD)
DCI	Development Cooperation Ireland
DFID	UK Department for International Development
DTF	Devolution Trust Fund
GDP	Growth domestic product
GENDERNET	DAC Network on Gender Equality (OECD)
GTZ*	German Agency for Technical Co-operation (<i>Deutsche Gesellschaft für Technische Zusammenarbeit GmbH</i>)
ICT	Information and communication technology
IDA	International Development Association
IFC	International Finance Corporation
InfraPoor	POVNET Task Team on Infrastructure for Poverty Reduction
IWRM	Integrated water resource management
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
KfW*	German Bank for Development (<i>Kreditanstalt für Wiederaufbau</i>)
MDG	Millennium Development Goal
MTEF	Medium-term expenditure framework
NGO	Non-governmental organisation
NORAD	Norwegian Agency for Development Cooperation
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
PIDG	Private Infrastructure Development Group
PIP	Public investment programme
POVNET	DAC Network on Poverty Reduction (OECD)
PRS	Poverty reduction strategy
PSB*	<i>Palli bidyut samities</i>

PSIA	Poverty and social impact assessment
RADEEF*	<i>Régie autonome de distribution et d'électricité de Fès</i>
REDI	Recent Economic Developments in Infrastructure
Seco	Swiss State Secretariat for Economic Affairs
Sida	Swedish International Development Cooperation Agency
TAF	Local Capacity Building Technical Assistance Facility
USAID	United States Agency for International Development

* Denotes acronyms in original language.

Executive Summary

Reliable, efficient infrastructure is crucial to economic and social development that promotes pro-poor growth. By raising labour productivity and lowering production and transaction costs, economic infrastructure – transport, energy, information and communication technology, and drinking water, sanitation and irrigation – enhances economic activity and so contributes to growth, which is essential for poverty reduction. Thus a major goal for Development Assistance Committee (DAC) partner countries, with help from donors, is to develop sustainable infrastructure facilities and services that improve the livelihoods of poor people and enable them to participate in growth.

The important demand for infrastructure is not being met. Around the world more than 1 billion people lack access to roads, 1.2 billion do not have safe drinking water, 2.3 billion have no reliable sources of energy, 2.4 billion lack sanitation facilities and 4 billion are without modern communication services. In the absence of accessible, affordable infrastructure, poor people pay heavily in time, money and health. Recent estimates put annual investment needs for infrastructure (including rehabilitation and maintenance) at 5.5% of growth domestic product (GDP) in developing countries and 9% in the least developed countries (IMF and World Bank, 2005). Current spending falls far short, averaging 3.5% of GDP in developing countries. In sub-Saharan Africa, for example, annual infrastructure needs are USD 17-22 billion, while the annual spending (domestic and foreign, public and private) is about USD 10 billion. The region's infrastructure financing gap is thus USD 7-12 billion per year, or 4.7% of GDP.

Donors are working together to enhance infrastructure's contributions to economic growth and poverty reduction. Infrastructure's importance for growth, poverty and the Millennium Development Goals (MDGs) has been recognised at several major donor meetings, including the International Conference on Financing for Development (Monterrey, 2002) and World Summit on Sustainable Development (Johannesburg, 2002). Building on these efforts, in 2003, the DAC chose infrastructure as a major area of analysis for its Network on Poverty Reduction (POVNET). The Task Team on Infrastructure for Poverty Reduction (InfraPoor) was created to guide efforts by DAC members to enhance infrastructure's contribution to poverty reduction and economic growth. The team's conclusions, presented in this report, are summarised in four guiding principles.

The guiding principles offer a consensus framework for meeting infrastructure challenges. They are:

- i) Use partner country-led framework as the basis for co-ordinated donor support.
- ii) Enhance infrastructure's impact on poor people.
- iii) Improve management of infrastructure investment, to achieve sustainable outcomes.
- iv) Increase infrastructure financing and use all financial resources efficiently.

These principles apply generally, to all infrastructure investment, as well as specifically – to individual sectors and types of countries.

Applying the principles generally

The first principle, using a country-led approach, is central. Partner countries must develop comprehensive infrastructure strategies, linked to other economic and social sectors and plans. Developing such strategies requires responsive government entities, clear regulations and participation by accountable stakeholders. To support country-led infrastructure strategies, donors should:

- i) Co-ordinate their assistance by establishing common approaches and methods (with explicit measures of their impact on poverty), agreeing on lead donors, sharing technical assistance and research data. Donors should continue to make progress on untying aid for infrastructure, as encouraged by the DAC's Recommendation on Untying Official Development Assistance to the Least Developed Countries (2001) and by the Paris Declaration on Aid Effectiveness – Ownership, Harmonisation, Alignment, Results and Mutual Accountability (2005b).
- ii) Promote a programme-oriented approach in partner countries to foster coherent, network-wide strategies and develop the cross-sector synergies needed for pro-poor growth. This approach requires support for sector reforms, programmes and budgets. Support for sector programmes can also be provided through national budgets. If conditions prevent a programmatic approach at the national level, support should increasingly be co-ordinated within an agreed strategic framework.
- iii) Exchange analyses of the viability and sustainability of proposed infrastructure investments in partner countries. Such analyses should include *ex ante* poverty impact assessments and joint monitoring of whether assistance strategies are contributing to sector development and poverty reduction.
- iv) Co-ordinate training and technical assistance for planning, designing, managing, operating and regulating infrastructure – taking into account partner countries' administrative rules and avoiding use of donor-led project management units and similar structures. Donors should also encourage South-South sharing of expertise and good practices, as well as involvement by local and regional experts.

The second principle, focusing on poor people, should inspire all efforts to promote pro-poor growth. Partner countries, with donor support, should:

- 1 Develop infrastructure programmes and projects that use geographic targeting to improve livelihoods, incomes and social services for the greatest possible number of poor people.
- 1 Promote synergies between economic and social infrastructure to amplify benefits for the poor and achieve the MDGs.
- 1 Support involvement by poor people, women and men, vulnerable groups and those in chronic poverty (including the disabled, the elderly and minorities) in the entire process – from planning and implementation to management and maintenance – to ensure that infrastructure supplies reflect needs and prevent or mitigate negative impacts.
- 1 Adopt technological and commercial options tailored to investment areas' long-term service needs and make services as affordable as possible for poor people.
- 1 Offer technical and financial incentives to promote involvement by the local private sector.

- i) Reduce gender inequities and include vulnerable groups when designing infrastructure strategies and programmes.

To help reach the poor and promote pro-poor growth, donors should support these efforts as well as specifically to:

- i) Target infrastructure interventions to areas that enable the largest possible number of poor people to engage in productive activities and access social services, using a cross-sector approach linked to MDG outcomes.
- ii) Encourage the involvement of poor communities through, for example, decentralised planning systems that incorporate explicit poverty reduction goals (such as universal coverage for basic services).
- iii) Propose technological and commercial options tailored to investment areas' long-term service needs.
- iv) Support tariff policies that poor users can afford – including smart subsidies and flexible payment structures – and ensure that users are consulted on needed tariff increases.
- v) Provide technical and financial incentives (certification, risk insurance) for local private sector involvement.
- vi) Promote employment creation in infrastructure construction, operation and maintenance.
- vii) Systematically address gender-specific needs when designing infrastructure projects.
- viii) Prevent or mitigate negative impacts on vulnerable groups and promote inclusion of the disabled, the elderly and minority groups.

The third principle, enhancing sustainability, is the priority for action. Driven by strong co-ordination among donors, actions under this principle seek to preserve infrastructure assets and increase service access and affordability – and, in so doing, encourage sustainable and ongoing investments that further expand access. To enhance the sustainability of infrastructure investments, donors should:

- i) Emphasise the crucial role of infrastructure maintenance and sustainability in preserving the value of infrastructure assets. Strengthening such efforts in partner countries requires funding, technical assistance and capacity building.
- ii) Help partner countries establish systems that recover costs and collect tariffs, while taking into account poor people's ability to pay.
- iii) Support – before services are extended – improvement in the management of public service providers, to reduce commercial and technical losses and thus lower costs and make services more affordable.
- iv) Foster public-private partnerships to enhance project efficiency and improve sector governance.
- v) Strongly support initiatives that promote transparency and reduce corruption.
- vi) Promote environmental and social impact assessments, and encourage sustainable resource management through price incentives.

The fourth guiding principle, increasing financing and using it well, follows from the other three. The first three principles indicate the need for a sharp increase in infrastructure investment – as well as the challenges involved for partner countries. At a minimum, countries must achieve macroeconomic stability and prioritise public spending. Moreover, countries cannot hope to fill the investment gap without mobilising private funds.

To encourage broader and better involvement by the foreign and domestic private sector – as well as by central and local governments – in infrastructure financing, donors should:

- i) Provide predictable, long-term official development assistance.
- ii) Support a diverse mix of financial instruments, including credit enhancements (guarantees, co-financing, swaps from local to hard currencies) and investments in public-private partnerships.
- iii) Provide technical assistance to build capacity in capital and financial markets and develop regional, national and subsovereign financing mechanisms for infrastructure.

Applying the principles by sector

Transport facilitates access to economic and social services and enhances the production and trade potential of local, national and regional economies. But transport costs are often high and maintenance inadequate, and sector activities can contribute to problems such as pollution and the spread of HIV/AIDS. To enhance the pro-poor growth and poverty reduction impacts of their support for transport infrastructure, donors should:

- i) Strengthen co-ordination among administrative bodies and their public investment programmes to comprehensively and equitably address new investment, maintenance, services and urban mobility as well as to increase public and private investment.
- ii) Promote comprehensive, economically, socially and environmentally justified networks, including cross-border networks.
- iii) Encourage a service-oriented approach to optimise use of available resources, public and private.
- iv) Strengthen institutional arrangements and capacity for maintenance by promoting the “user pays” principle.
- v) Encourage local private provision of services and development of local industries for construction and maintenance of facilities.
- vi) Address health, safety, environmental and social concerns, including impacts on and needs of vulnerable groups.

Reliable, modern energy services are essential for raising growth and productivity and improving the livelihoods of poor people. But most poverty reduction strategies have paid little attention to the sector. Donors’ support for energy should:

- i) Support investments in grid extensions and in areas where providing energy services is unattractive to private investors but necessary from a social perspective – as long as operation and maintenance costs are covered by tariffs or temporary subsidies.
- ii) Support reforms and regulations that encourage efficient power use and result in tariff collection policies that attract private investment.
- iii) Promote cross-border energy initiatives.
- iv) Adapt energy supply technologies (including biomass) to productive uses, particularly among the poor.
- v) Support efforts to improve poor households’ access to safe energy, such as biomass, when modern energy cannot be provided cost-effectively.
- vi) Provide accompanying measures, such as micro-finance schemes, to increase poor people’s access to appropriate energy services.

- vii) Strengthen the management capacity of all energy sector entities, including for transparency and accountability.
- viii) Address concerns about environmental sustainability, energy security and access to modern energy in remote areas by promoting renewable energy sources and energy efficiency.

Information and communication technology (ICT) increases the efficiency of a wide range of efforts, from public administration to economic and social services to pro-poor growth. Yet partner countries and donors still have limited involvement in the sector – despite essential and unfulfilled public functions such as generalising new technology, strengthening regulation and financing backbone infrastructure. To increase ICT’s contribution to pro-poor growth, donors should:

- i) Support planning and investment in backbone infrastructure – particularly trunk and rural communication networks – and increased access through innovative financing facilities and network sharing arrangements.
- ii) Link ICT programmes with activities in other sectors, particularly those that promote productive activities for poor people.
- iii) Support ICT policy making and regulation, including regulation enforcement.

Despite the importance of water resources – including for drinking water, sanitation and irrigation – public bodies often fail to manage them correctly, with severe consequences for poor people. Water is directly linked to agriculture, food security and health as well as environmental, gender equality, social development and many other issues. Donor support for the water sector should:

- i) Promote, using the integrated water resource management (IWRM) framework, better co-ordination between central and decentralised levels to rationalise water use for productive purposes. Donors should also help develop and implement water (and land use) laws, regulations and other sector reforms.
- ii) Promote technical and economic assessments of and investments in irrigation, using common methodologies (particularly for investments covering multiple countries) and taking into account social and environmental issues.
- iii) Favour participatory irrigation management, to facilitate recovery of operation and maintenance costs and improve environmental security.
- iv) Strengthen public bodies responsible for water services and support their expansion only after their management has improved. Efforts can be made to stem technical and non-technical losses, encourage public-private partnerships, introduce demand management (such as metering, leakage control, conservation and reuse programmes) and support tariff policies that promote affordability (through smart subsidies, for instance), “polluter pays” principle and institutional sustainability.
- v) Encourage peri-urban and rural access to regular, low-cost drinking water by involving the domestic private sector under decentralised public structures.
- vi) Promote sanitation investment, capacity building and hygiene education.

Applying the principles in different types of countries

Fragile and post-conflict states suffer from weak governance and damaged core infrastructure facilities. Donor support for infrastructure in these states should:

- i) Take the country context as the starting point.
- ii) Restore core infrastructure – using a co-ordinated, long-term approach – and applying basic design standards to increase access.
- iii) Rebuild governance and administrative capacity.

Many middle-income countries suffer from deep pockets of poverty. In these countries donor interventions should:

- i) Focus on poverty-stricken areas and promote pilot approaches that include such areas in national pro-poor growth efforts.
- ii) Engage the private sector and encourage public-private partnerships.
- iii) Use innovative mechanisms to leverage additional financing – freeing up aid for low-income countries, particularly in Africa.
- iv) Use decent country systems for procurement and social and environmental safeguards.
- v) Focus on the environmental and governance-related strategic development goals identified in the Millennium Declaration, in addition to poverty reduction goals linked to the MDGs.

Regional and cross-border infrastructure can provide many benefits, including increasing trade, improving security, saving money, strengthening natural resource management, addressing the needs of landlocked countries and building on national and regional comparative advantages. To promote such infrastructure, donors should:

- i) Support trade and transport facilitation, such as through efforts to reduce border crossing problems – including rationalisation of procedures and elimination of illegal or semi-legal checkpoints on roads – and increase the efficiency of multi-country operations in other network industries, such as railways and electricity.
- ii) Assess potential benefits (for countries, regions and people) and ensure that designs and financing arrangements address concerns about equity.
- iii) Contribute to capacity building and project preparation facilities in regional bodies.
- iv) Ensure that their support promotes regional public goods such as pro-poor growth, poverty reduction and environmental protection.

Assessing the impact of infrastructure

Without measuring, it is impossible to know infrastructure's impact on poverty reduction. Moreover, comparability and consistency require common indicators and approaches to data collection, assessment and monitoring. To better assess how infrastructure investments affect pro-poor growth, donors should:

- i) Strengthen country systems and capacity to generate relevant indicators and data. Support should be provided to strengthen the capacity of line ministries, other government agencies and local research institutes to collect and analyse data needed for pro-poor planning of infrastructure delivery.

- ii) Encourage simple, harmonised, *ex ante* poverty impact assessments of infrastructure, aligned with poverty reduction strategies and the capacity of partner countries.
- iii) Engage in joint monitoring and evaluation – involving donors, governments and other stakeholders – to build and share knowledge. Monitoring and evaluation should also aim to strengthen local research and analytical capacity, by involving government agencies, national and regional research institutions, civil society organisations and local consultants.

Monitoring the principles

Implementation of the principles must be monitored to ensure intended outcomes and generate lessons. Task team members have agreed to monitor implementation using DAC's framework for thematic peer review. In addition, implementation should be evaluated in collaboration with partner countries, facilitating co-ordinated follow-up at the country level.

Chapter 1

Scaling Up and Improving Infrastructure for Poverty Reduction

Because of insufficient investment, inadequate planning, poor maintenance and unsustainable sector governance, most DAC partner countries – especially low-income countries – suffer from huge gaps in infrastructure. Without major progress, it will be impossible for these countries to significantly reduce poverty and achieve the Millennium Development Goals (MDGs). Thus a better approach is needed to ensure substantial, sustained improvements in development of and access to infrastructure facilities and services, especially by poor people. The main challenge is to foster a dynamic growth process that develops infrastructure services and involves and benefits the poor.

Economic infrastructure – crucial to achieving growth and reducing poverty¹

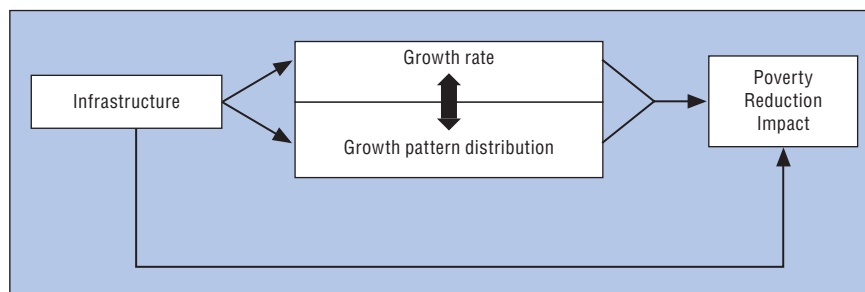
Defining infrastructure. In 2003 DAC's Network on Poverty Reduction (POVNET) began an ambitious programme to advance pro-poor growth. Reflecting the renewed international emphasis on infrastructure's role in such growth, POVNET assembled a Task Team on Infrastructure for Poverty Reduction (InfraPoor) to analyse recent strategies and needed actions in this area. Although the team recognises the importance of social infrastructure such as health, education and culture, this report focuses on economic infrastructure – transport, energy, information and communication technology, and irrigation, drinking water and sanitation – referred to hereafter as infrastructure. All such infrastructure involves both physical facilities (roads, energy generation, water connections) and services (transport services, energy and water supply). It also involves investment, management, maintenance, capacity building and policy making. In addition, it can span countries, borders and regions.

Infrastructure is important for pro-poor growth. In past decades donors supported infrastructure investment because they believed that it contributed to growth, trickle-down economic development and redistribution to poor people. Today the links between infrastructure development and pro-poor growth are better understood. Infrastructure supports pro-poor growth by:

- i) Enhancing economic activity and thus overall growth – for example, by reducing production and transaction costs, increasing private investment, and raising agricultural and industrial productivity (top arrow in Figure 1.1).
- ii) Removing bottlenecks in the economy which hurt poor people by impeding asset accumulation, lowering asset values, imposing high transaction costs and creating market failures. Eliminating these bottlenecks allows the poor to contribute to growth directly through the employment and income opportunities created by the construction, maintenance and delivery of infrastructure services, and indirectly through better services (middle arrow in Figure 1.1).
- iii) Generating distributional effects on growth and poverty reduction through poor people's increased participation in the growth process – for example, by increasing their access to factor and product markets, reducing risk and vulnerability, enhancing asset mobilisation and use, and promoting their empowerment (bottom arrow in Figure 1.1).

Infrastructure also affects non-income aspects of poverty, contributing to improvements in health, nutrition, education and social cohesion. Indeed, infrastructure makes valuable contributions to all the MDGs (bottom arrow in Figure 1.1), as described in a background paper prepared for the InfraPoor Task Team (Willoughby, 2004b) that is summarised in Annex B. The many benefits of infrastructure have also been confirmed by the UN Millennium Project (2005), which advocates a major increase in basic infrastructure investments to help countries (especially in Africa) escape the poverty trap, and by the Commission for Africa (2005). But to be effective in reducing poverty, infrastructure development must be co-ordinated with other important concerns, such as agricultural, environmental and trade policies.

Figure 1.1. **Infrastructure can raise growth, improve its distribution and reduce poverty**

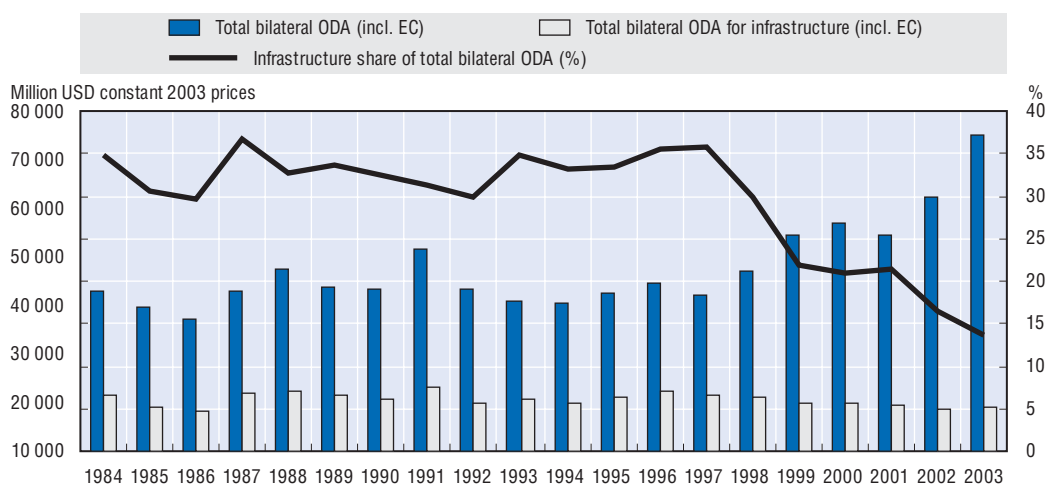


Recent trends in infrastructure – a widening gap²

The infrastructure gap is huge. Despite its clear benefits for growth and poverty reduction, infrastructure spending is far below what is needed. Moreover, that gap widens as country incomes fall. Globally, more than 1 billion people have no access to roads, 1.2 billion do not have safe drinking water, 2.3 billion lack reliable sources of energy, 2.4 billion have no sanitation facilities and 4 billion no modern communication services. In the absence of accessible transport, energy and water, the poor pay heavily in time, money and health.

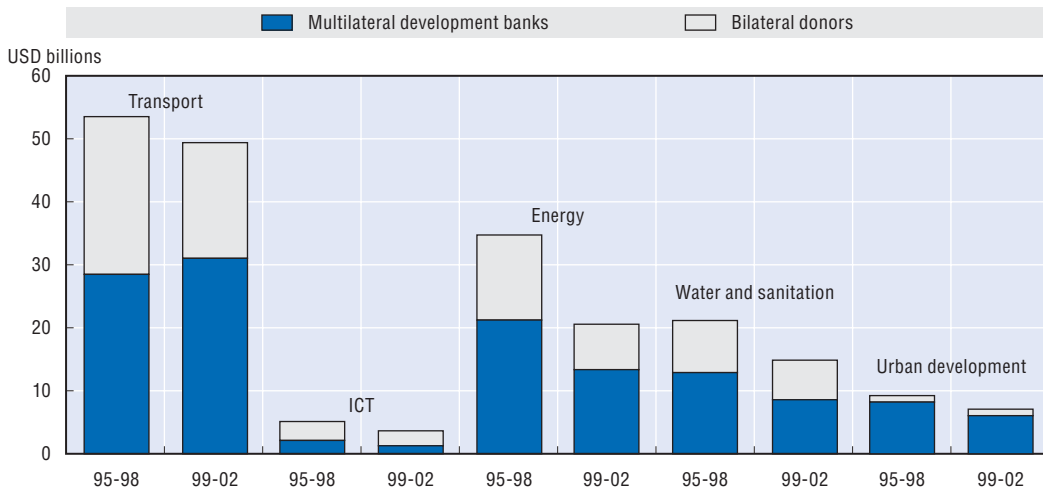
The drop in infrastructure investment was no accident. Spending on infrastructure (both capital and recurrent costs, including maintenance) in low- and lower-middle income countries has declined from 15% of GDP in the 1970s and 1980s to about 7% today (World Bank, 2003). Since the mid-1990s all sources of infrastructure funding have fallen dramatically: government funding (which accounts for about two-thirds of spending), official development assistance (with a 50% drop in multilateral and bilateral aid to infrastructure; see Figure 1.2 and World Bank, 2003) and private funding (which dropped from USD 128 million in 1997 to USD 58 million in 2002; World Bank, 2003). All sectors and regions have been affected by the decline (Figures 1.3 and 1.4). As a result many countries, especially in sub-Saharan Africa, suffer from a huge backlog of needed infrastructure investments.

Figure 1.2. **Bilateral aid for infrastructure has plummeted**



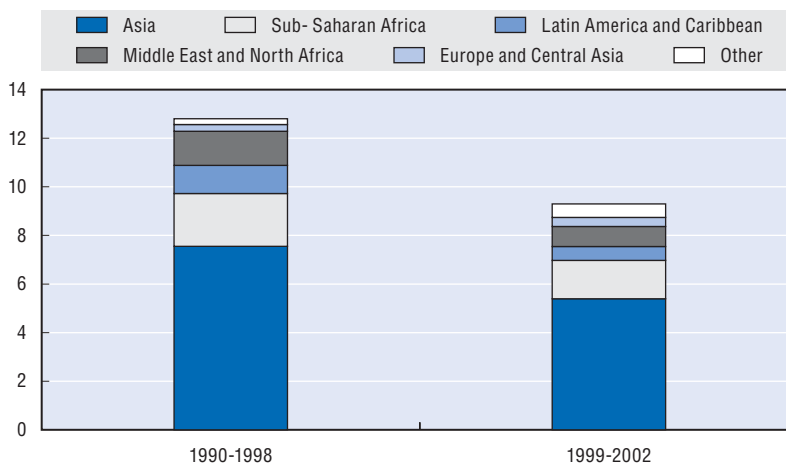
Source: OECD Creditor Reporting System (CRS); Commitments.³

Figure 1.3. **The drop in donors’ infrastructure investment has hit all sectors**



Source: Hesselbarth (2004).

Figure 1.4. **All regions are hit by the decline of ODA to infrastructure**



Source: Hesselbarth (2004).

To reduce poverty, the decline in infrastructure investment must be reversed.

A significant increase in national, cross-border and regional infrastructure investment is needed to advance growth and reduce poverty in partner countries. Even more is needed in extremely fragile countries and regions. The UN Millennium Project estimates that between 2005 and 2015, sub-Saharan Africa’s annual needs for infrastructure investment and maintenance equal 13% of GDP. Maintenance is especially important: according to World Bank estimates, more than two-thirds of partner countries’ infrastructure spending needs in 2005 – 10 are for maintenance.

Lessons from experience

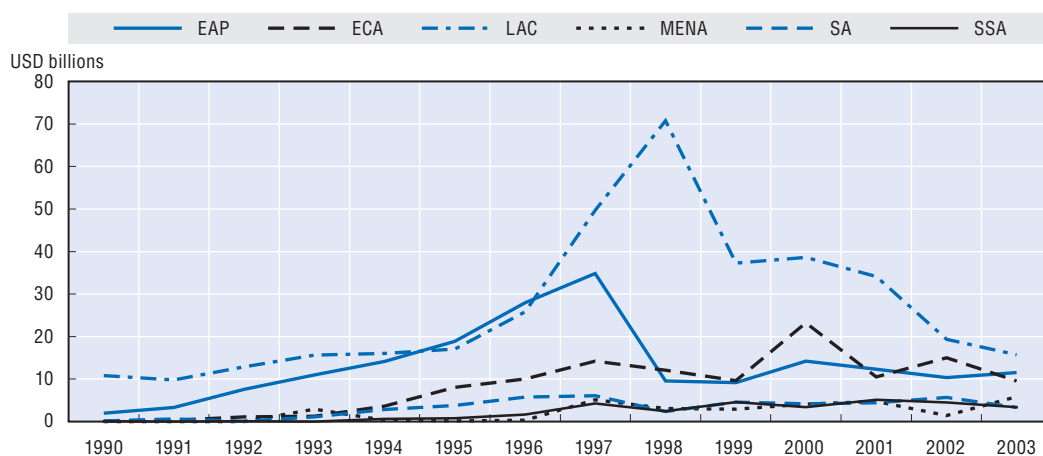
Against this background, four lessons are clear:

- i) **Substantial improvements in infrastructure are needed to support pro-poor growth and the MDGs.** During the 1990s donors shifted from infrastructure to social

investments partly to compensate for the adverse effects of structural adjustment policies. But this move neglected infrastructure's importance in reducing poverty and supporting growth. Moreover, infrastructure projects were not designed to deliver maximum benefits to poor people, including through participation, targeting, and capacity building.

- ii) **The public and private sectors both play important roles in providing infrastructure facilities and services.** But in the 1990s it was widely believed that private investment in infrastructure would increase as public investment and aid declined. This assumption proved incorrect, as shown in Figure 1.5. For various reasons, mainly involving investment climates and rates of return, private investment has been limited in terms of volume, sectors and countries – especially in sub-Saharan Africa but also in South Asia and the Middle East and North Africa. Thus, to achieve optimal management of infrastructure facilities (in line with private sector rules), make the best use of resources and extend services to the maximum number of people, governments should be active in planning, financing and regulating infrastructure investment. Africa's shortfall is partly due to shrinking public budgets for infrastructure – while spending has increased in other areas, including the social sector (Figure 1.1).

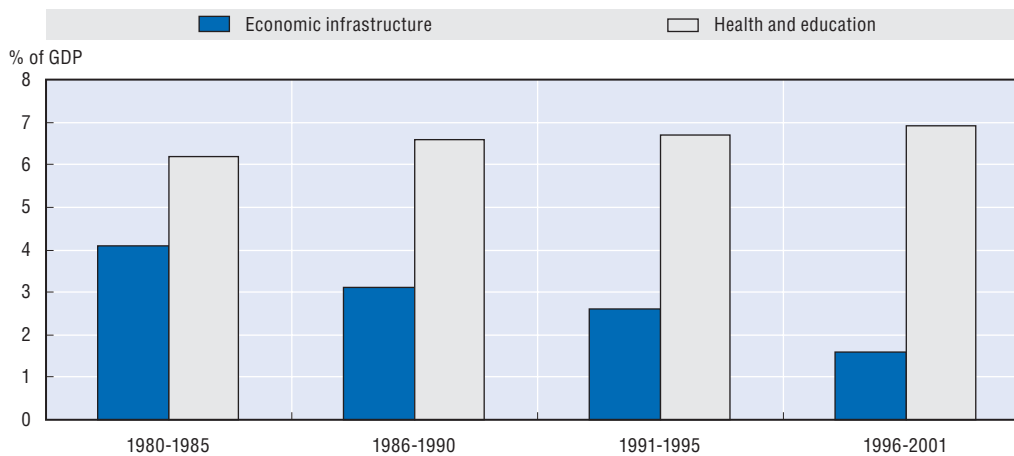
Figure 1.5. **Infrastructure investment with private participation has faltered everywhere and never took off in some regions**



Note: EAP: East Asia and Pacific; ECA: Europe and Central Asia; LAC: Latin America and Caribbean; MENA: Middle East and North Africa; SA: South Asia; SSA: Sub-Saharan Africa.

Source: World Bank Private Participation in Infrastructure database.

- iii) **Sustainable infrastructure services are a priority.** The drop in infrastructure investment has also been driven by poorly designed projects, many of which have been isolated, driven by donor demands and not tailored to the needs of local populations. For example, many investments have focused more on developing physical facilities than on delivering long-term services. Moreover, non-viable systems have caused asset losses for infrastructure providers and failed to provide benefits to poor people. Recent experiences show that a more systemic approach achieves better results when designing infrastructure projects. In addition, sustainable investments require maintaining services and developing and supporting the institutions responsible for managing infrastructure assets. Finally, infrastructure facilities should reflect the needs of local populations, especially the poor.

Figure 1.1. **Public spending on infrastructure has plunged in Africa**

Note: This figure was based on an 11-country sample.

Source: World Bank (2005a).

- iv) **Optimal use should be made of available resources.** During the 1980s and 1990s infrastructure support was often spent poorly, reflecting insufficient co-ordination among donors on the needs of partner countries – often due to donors’ own interests – as well as between donors and country stakeholders. Because infrastructure serves a wide range of sectors and groups, adequate co-ordination is needed when identifying needs, planning services and determining budget allocations. Resource use can be optimised by using sector-wide approaches and implementing the Paris Declaration on Aid Effectiveness (OECD, 2005b).

Notes

1. This section draws on, among other sources, Willoughby (2004a; b).
2. This section draws on, among other sources, Hesselbarth (2004).
3. The following sectors/activities have been included in “infrastructure”: water supply and sanitation, transport and storage, communications, energy generation and supply, agricultural water resources, urban development and management, rural development.

Chapter 2

Four Guiding Principles for Using Infrastructure to Reduce Poverty

This report's recommendations for donors and partner countries are based on four guiding principles:

- 1 Use partner country-led frameworks as the basis for co-ordinated donor support.
- 1 Enhance infrastructure's impact on poor people.
- 1 Improve management of infrastructure investment, to achieve sustainable outcomes.
- 1 Increase infrastructure financing and use all financial resources efficiently.

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

The first principle reflects the leading role of partner country governments in establishing solid frameworks for reliable aid flows. Partner governments should develop robust approaches for planning and managing pro-poor growth and infrastructure development, expressed in coherent poverty reduction strategies and sector strategies formulated in consultation with stakeholders – including donors and poor people. Donors can support this country-led, outcome-oriented approach by helping to build capacity and by co-ordinating and harmonising their support in line with country priorities for reducing poverty.

Developing consistent country strategies for infrastructure and pro-poor growth

Address infrastructure needs in poverty reduction and pro-poor growth strategies.

A coherent national framework is essential for increasing infrastructure's contribution to pro-poor growth (Tedd, 2005). For partner countries not using poverty reduction strategies (PRSs), national development strategies should contain clear goals and plans for reducing poverty and inequality. Second generation PRSs are paying more attention to pro-poor growth, a trend that should continue. More thorough treatment of infrastructure in PRSs – including its impact on growth, poverty reduction and the MDGs – is also needed. Many PRSs treat infrastructure in a piecemeal way (addressing only rural roads, not the entire network, or physical infrastructure but not services) and are unclear about its links to other components of the strategy. It is not simply a matter of including planned infrastructure projects in PRSs, as doing so may compound the “wish list” problem. A PRS should clearly define infrastructure's expected contributions to the strategy's main targets and priorities, as well as to national MDG targets. In addition to facilitating pro-poor growth, such expectations include enhancing market access, mitigating environmental concerns, increasing gender equity and improving livelihoods and working conditions (including through increased gender equity).

Anchor infrastructure's contributions to poverty reduction and the MDGs in sound strategies. Infrastructure strategies – both for individual sectors and overall – must be country-owned, based on consultations with stakeholders and linked to the PRS. Strategies should express a vision for each sector and indicate how poor people's needs will be met. *Ex ante* impact assessments at the sector level can help define expected outcomes and

specify (using indicators) how infrastructure will contribute to pro-poor growth, poverty reduction and the MDGs.¹ Good infrastructure strategies address the entire network at the national and local levels, as well as regional and cross-border links. They include public sector responsibilities and interventions as well as the roles of the private sector and civil society in supplying, managing and maintaining facilities and services. Implementation plans must be politically and economically viable, addressing issues such as institutional capacity, sector management, and the adequacy and consistency of fiscal and donor commitments.

Link strategies to budgets. Functional links must be established between PRSs, sector strategies, and national and sector budgets, with clear connections between development priorities and programming of domestic and donor resources. Current weak links between strategies and budgets (including significant off-budget funding) impede co-ordinated infrastructure investment consistent with national poverty reduction priorities. Investments in infrastructure should be a component of a balanced and well resourced multi-sectoral expenditure programme implementing the PRS. To that end, it is useful to elaborate a medium-term expenditure framework (MTEF) aligned with the PRS. Operational sector strategies require budgets that reflect infrastructure needs, priorities and available resources, and that cover investment – including recurrent costs, with an emphasis on maintenance.

Develop better data on infrastructure needs and spending, including indicators of outcomes and impacts. Well-targeted infrastructure interventions require background data to prioritise investment and maintenance needs, then estimate (*ex ante*) and measure (during implementation and *ex post*) their impacts. In addition, sound country-led frameworks require data that quantify the links between infrastructure and poverty. Moreover, sector data are essential to effective management information systems in sector institutions and serve needs of other sectors, PRSs and donors. Yet partner countries often lack such data. Many national statistical offices do not have sufficient physical and financial capacity to collect basic data and conduct household surveys, while line ministries and agencies do not have enough incentives, capacity or resources. Sector data are often limited to physical output indicators, with no indication of outcomes, usefulness or impacts on the country's development goals. There are rarely systematic mechanisms for using basic data and surveys to inform policies and strategies; central planning agencies responsible for PRSs have little access to infrastructure data, and sector agencies are reluctant to establish frameworks and indicators for monitoring outcomes and impacts. Donors collect data, but often only for their projects or programmes. Such data may rarely be shared with the country or with other partners, and data are not always comparable across studies. Thus there is an enormous need to strengthen the capacity of line and oversight ministries, other agencies and local research institutes to collect and analyse data needed for planning infrastructure investments and sector reforms.

Improving frameworks for investment and management

Strengthen government's role. The 1990s saw an extreme weakening of government infrastructure planning, in some countries partly because of efforts to shift investment and management responsibilities to the private sector. But government has an indispensable role in planning infrastructure, and at much more detailed structural and systemic levels than in other industries. This is because of infrastructure's crucial role in supporting overall development and the need for co-ordination among the multiple entities involved, public or

private. To ensure that partner governments act efficiently and effectively, the roles and responsibilities of the various actors involved in infrastructure – central and local governments, domestic and foreign entrepreneurs, civil society, donors – must be optimised. This adjustment is needed to focus central governments on funding, regulation, and policy elaboration and implementation; to better balance the roles of national, provincial and local stakeholders; and to outsource, when possible, service provision to the private sector.

Involve stakeholders. Participation by stakeholders in infrastructure planning and decision making helps balance different interests and strengthens ownership and accountability. Stakeholder participation is important at all levels, from national to community strategies, and all stages, from designing to maintaining investments. All stakeholders – especially user groups and poor people – should be equitably represented.

Ensure transparency and accountability. Transparent processes should be established for public finance management, covering both the revenues and expenditures of government and para-statal bodies. Transparency involves independent audits, public display of tariffs and publication of annual activity reports, with specific mention of how services are being improved for the poor. Because infrastructure decisions can be affected by corruption and favouritism, a systemic approach should be used to ensure accountability, participatory planning, transparent monitoring and competitive implementation; and procurement reforms and transparent contracting arrangements promoted at the project and programme levels.

Regulation – a core government responsibility. Infrastructure with a public good character (such as most roads) is better provided by government, while infrastructure considered private goods (such as energy services) can potentially be transferred to private ownership or management – under regulation. Key issues for regulation include developing an orientation towards pro-poor growth, defining the level of government where regulation should occur and deciding on multi- or single-sector approaches. Responsiveness to the needs of poor customers may suggest placing regulatory responsibilities close to service provision, but financial and technical capacity and resources are generally greater at higher levels of government. Hence a multi-level solution may be appropriate. Regulation of private operators should establish rates of return and define good management and extension of infrastructure services. Achieving the latter may require providing subsidies to the private sector, in a transparent way, to promote investments that serve the poor.

Defining the role of donors: Support, co-ordinate and harmonise

To strengthen their support for country-led infrastructure, donors should:

- i) Co-ordinate their assistance for infrastructure strategies agreed with partner countries. Such efforts require establishing common approaches and methods (with explicit measures of their impact on poverty), agreeing on lead donors, sharing technical assistance and research data. Donors should continue to make progress on untying aid for infrastructure, as encouraged by the DAC's Recommendation on Untying Official Development Assistance to the Least Developed Countries (2001) and by the Paris Declaration on Aid Effectiveness – Ownership, Harmonisation, Alignment, Results and Mutual Accountability (2005b).
- ii) Promote a programme-oriented approach in partner countries to foster coherent, network-wide infrastructure strategies and develop the cross-sector synergies needed for pro-poor growth. This approach requires support for sector reforms, programmes

and budgets. Support for sector programmes can also be provided through national budgets. If conditions prevent a programmatic approach at the national level, support should increasingly be co-ordinated within an agreed strategic framework.

- iii) Exchange analyses of the viability and sustainability of proposed infrastructure investments in partner countries. Such analyses should include *ex ante* poverty impact assessments and joint monitoring of whether assistance strategies are contributing to sector development and poverty reduction.
- iv) Co-ordinate training and technical assistance for planning, designing, managing, operating and regulating infrastructure – taking into account partner countries' administrative rules and avoiding use of donor-led project management units and similar structures. Donors should also promote South-South sharing of expertise and good practices, as well as involvement by local and regional experts.

Principle 2: Enhance infrastructure's impact on poor people

The second principle reflects the need not only to increase the supply of infrastructure facilities and services in areas where poor people live, but also to ensure that infrastructure improvements benefit them. The latter goal will be achieved by promoting a dynamic process of inclusive growth and by strengthening infrastructure's social and economic effects on poverty reduction – perhaps the greatest challenge facing donors and partner countries. Infrastructure must do more than provide users with affordable, reliable facilities. It must also promote economic activities, particularly private sector involvement and employment, and ensure that women and marginalised groups gain more equal access to infrastructure resources and services.

Improving poor people's access to infrastructure services

Target bottlenecks to poverty reduction. In planning infrastructure and setting priorities for pro-poor growth, limited resources make it essential to identify and target the most serious infrastructure-related bottlenecks to such growth. (Examining characteristics of target areas – such as the proportion of lowest-income groups or vulnerability to natural disasters or famines – also helps make planning more pro-poor.) Better information is needed on such bottlenecks and on how to ensure that infrastructure planning accounts for it. For targeting to be more effective, partner and local governments must engage in a participatory process to increase its impact. At the same time, narrow targeting on the very poor is ineffective. An appropriate approach is to combine geographic targeting with other measures to extend services to the poor, such as adapted service standards, use of low-cost products, affordability-enhancing measures, and employment and income generation opportunities. The process of selecting target areas (rural or urban) must occur in the framework of an overall network approach, using harmonised methods for prioritising areas, conducting household surveys and assessing impacts.²

Strengthen decentralised planning with beneficiaries. Beneficiary participation in planning is needed not only to ensure that infrastructure facilities and services respond to the needs and priorities of the poor, but also to build local ownership and capacity to sustain them. Local planning should be connected to district planning structures and systems to further promote interest in maintaining assets once plans have been implemented.

Establish cross-sector synergies. Co-ordinated interventions involving more than one infrastructure sector do more for pro-poor growth than do single-sector interventions. Benefits for the poor can also be increased by co-ordinating infrastructure interventions with activities in other sectors, particularly priority economic sectors and those that build human capital (education, health, food security). A major challenge for infrastructure policy makers and planners is to think well beyond their sectors and engage in dialogue and planning with other sectors and a broad range of stakeholders. For example, investments in electricity generation, transmission or distribution can be combined with financing schemes for the purchase of electrically powered machines and programmes to upgrade processing and production skills – enabling the poor to participate in local markets – while road rehabilitation projects can be combined with facilities and services to improve marketing of local goods.³ Priority should be given to strengthening the contribution of infrastructure to the MDGs to exploit opportunities for joint initiatives and synergistic impacts (Annex B).

Ensuring affordability for the poor

Take a demand-led approach. Infrastructure affordability can be significantly improved by taking a demand-led approach, defining appropriate service levels to raise low living standards. Sector planning must start with a clear understanding of the type, extent and quality of services involved – transport, energy, communications, water and sanitation – and needed by the poor, obtained through sound analyses of needs and capacities and systematic use of *ex ante* impact assessments.

Define appropriate levels of service. An appropriate service level is one that is low enough to make access as universal as possible but high enough to be efficient and protect health and the environment. Low service levels that appear cheaper in the short term may not be efficient or equitable. At the same time, infrastructure that relies on high-tech engineering standards may be too costly for the poor. Usually a middle ground of service provision – taking into account local conditions (urban/rural, geography, population density, average income) and infrastructure types – is most appropriate.

Make payment structures affordable to the poor. Many poor households pay large portions of their income for essential infrastructure services – often of low quality – provided by private vendors working in the informal sector, while government-subsidised services (particularly in water and irrigation, but also urban energy) are often captured by the rich. Appropriate tariff structures are an important tool for increasing poor people's access. More appropriate tariff collection systems and more flexible service provision (for example, in small amounts) helps the poor reduce their spending on such services. But such payment structures, together with the tariff and subsidy policies described below, are only possible when infrastructure spending is allocated appropriately.

Use smart and cross-subsidies to ensure affordability. Subsidies may be needed to ensure that services are accessible and affordable to the poor. Such subsidies must be “smart” – that is, targeted to increase access and affordability (not consumption), technically feasible and appropriate, and time-bound, with an exit strategy. Moreover, any tariff increase must be accompanied by visible improvements in service quality, quantity, or both, to increase users' ability and willingness to pay. In addition, concessional tariffs to households must not be at the expense of industrial and agricultural users. As part of smart subsidies, cross-subsidies through block tariffs – with tariffs rising in line with use, reflecting ability to pay – have proven particularly useful in extending access to energy and

water services.⁴ Application of smart and cross-subsidies is, of course, limited to those with access to infrastructure services. Thus other options are needed to increase access, such as universal service funds, auctions for minimum subsidy concessions, output-based aid and community grants to develop infrastructure and connections.

Increase in-kind contributions by users and beneficiaries. In-kind contributions of labour and materials are invaluable for making infrastructure more affordable in cash-poor communities. Such contributions must be commensurate with benefits. Elite capture and reinforcement of inequalities must be avoided by pricing in-kind contributions according to local market rates or by using broad, non-discriminatory targeting methods, based on factors such as gender equity and geography for example.

Generating employment

Promote local enterprise development. Although infrastructure facilities are generally built by large domestic and international firms as well as governments, infrastructure services can be the domain of local private actors. To support poverty reduction, local contractors and service providers (including small and micro-businesses, community co-operatives and the like) should be encouraged to extend their services to remote rural areas and poor communities, where profit margins are lower and provision is more difficult. Partner countries and donors have not focused enough on such providers. Room exists to involve the local private sector in public-private partnerships, and measures to increase its access to service markets – such as promoting and regulating standards, providing certification and lowering contract amounts – should be promoted. Improving access to credit and risk insurance is an important complementary measure.

Create employment opportunities for the poor. Jobs created in the construction, operation and maintenance of infrastructure facilities, while often limited in scale and sustainability, can make a significant contribution to poor people's income. Thus labour-based methods for community works and maintenance activities should be used as much as possible. Governments should avoid using force account labour due to its often low standards and effectiveness, as well as the market distortions it creates. But this must not be work at any cost. Partner governments need to enforce basic labour, health and safety standards to reduce accidents, prevent exploitation and ensure fair payment for workers in infrastructure operations.

Improving gender equity, inclusion of the disabled and social safeguards

Plan infrastructure to reduce gender inequalities.⁵ Gender equity and reduced inequality are crucial for poverty reduction. Pro-poor policies promote women and men's participation in infrastructure construction, operation and maintenance on fair terms, and ensure that both sexes can exploit infrastructure facilities and services to facilitate market access and income generation. Women may be more willing than men to pay for household services, but their ability to do so is often lower. Water fees, for example, are often based on a household's ability to pay – but it is often women who pay, resulting in gender inequities within the household. Infrastructure interventions should aim to significantly reduce the time that women spend on household tasks, particularly by improving access to water and sustainable energy sources. Well-designed infrastructure projects can bring significant positive benefits for women and girls by improving access to markets, schools, and health services or improving women's safety (OECD, 2005a). In addition, systematic analysis must be conducted on the needs and interests of both

women and men when planning infrastructure, including who pays and who benefits. Because there are often practical and cultural obstacles to women's equal participation in management and decision making, efforts are required to support women's involvement and to convince both women and men of the benefits. However, a recent study of the OECD's Creditor Reporting System concluded that while aid for transport, communications and energy infrastructure accounted for a third of bilateral aid, little was reported as focussed on gender equality (OECD, 2005a).

Include the vulnerable by planning social safeguards.⁶ The disabled and their families account for a quarter of poor people in some partner countries – perhaps even more in countries suffering or emerging from conflicts or disasters (whether natural, such as tsunamis, or man-made). Infrastructure availability and design can have a major effect on the risk of disability and the participation of disabled and other vulnerable groups in economic activities. Without social safeguards, infrastructure investments can harm such groups by displacing or excluding them, reducing their access to resources and exploiting their labour. The risks and negative impacts of infrastructure interventions can be avoided through better, more accessible planning and design. Government policies on vulnerable groups and the views of representative organisations should be considered when designing infrastructure strategies and programmes. The needs and views of vulnerable groups should also be taken into account in reconstruction and development efforts following conflicts and disasters.

Defining the role of donors: Focus on the poor's involvement in growth

To better reach the poor women and men and promote pro-poor growth, donors should:

- i) Target infrastructure interventions to areas that enable the largest possible number of poor people to engage in productive activities and access social services, using a cross-sector approach linked to MDG outcomes.
- ii) Encourage the involvement of poor communities through, for example, decentralised planning systems that incorporate explicit poverty reduction goals (such as universal coverage for basic services).
- iii) Propose technological and commercial options tailored to investment areas' long-term service needs.
- iv) Support tariff policies that poor users can afford – including smart subsidies and flexible payment structures – and ensure that users are consulted on needed tariff increases.
- v) Provide technical and financial incentives (certification, risk insurance) for local private sector involvement.
- vi) Promote employment creation in infrastructure construction, operation and maintenance.
- vii) Systematically address gender-specific needs when designing infrastructure projects.
- viii) Prevent or mitigate negative impacts on vulnerable groups and promote inclusion of the disabled, the elderly and minority groups.

Principle 3: Improve management of infrastructure investment, to achieve sustainable outcomes⁷

Sustainability is a primary concern for infrastructure development. Well-maintained infrastructure has strong positive effects on growth and poverty reduction, and provides

clear long-term fiscal and economic benefits. Thus emphasis must be placed on planning and budgeting for operation and maintenance. Maximising cost recovery and tariff collection is also essential. In addition, infrastructure sustainability needs to be given greater attention in the context of natural and local resource management as well as effects on climate change.

Increasing maintenance to sustain impacts and benefits

Budget for operation and maintenance. The backlog of infrastructure investment in partner countries is particularly severe when it comes to maintenance. Many countries – and donors – prioritise rehabilitation and new construction over maintenance. But shifting funding from new infrastructure towards operation and maintenance can contribute to economic growth. Thus partner governments and donors must make decisive changes in maintenance practices and investment priorities, with a significant reallocation of resources. Operation and maintenance must be given greater priority in budgets as well as to be made more affordable through appropriate technical standards and optimal use of local resources.

Use appropriate standards and local resources. Costs of construction and of operation and maintenance can be cut by setting appropriate design and technical standards for infrastructure facilities, matched to locally available skills, technologies and supplies. Such standards can also enhance operation and maintenance. In the roads sector, for example, this might mean relying more on single-carriageway gravel roads and spot improvements rather than full rehabilitation. Low-cost operation and maintenance also implies making the greatest possible use of local expertise and resources, including locally manufactured equipment and materials and local contractors, consultants and experts. A local approach also strengthens sustainability.

Emphasising cost recovery to increase viability

Pursue cost recovery – essential for sustainability – but also take a more strategic approach. Long-term subsidies decrease resources for other uses and so may be anti-poor. At the same time, failure to recover operation and maintenance costs leads to a vicious circle of insufficient financial resources, service degradation, falling revenue, further deterioration of services and persistent donor dependence. Cost recovery is therefore essential both to enhance sustainability and promote a pro-poor approach to infrastructure. But cost recovery efforts must balance efficiency and sustainability with affordability and equity. Ideally, average tariffs should cover both recurrent and capital expenditures, but this is likely to be impossible in many sectors and countries. Still, operation and maintenance costs must be recovered – through tariffs and other sources – to ensure the financial viability of infrastructure operators and the sustainability of facilities and services.

Improve tariff collection. Cost recovery can be improved through appropriate methods of tariff collection, involving all users (including governments) based on their consumption and ability to pay. Because poor households often pay informal service providers a lot for water and energy, affordability may also be a function of how charges are paid. Community-based tariff collection systems can be effective for local infrastructure facilities and services, but they place considerable demands on social and human capital and require genuinely equitable community management and ownership. And because tariff levels for basic services, especially water and energy, are socially and politically

sensitive – and increases are often strongly opposed – attention must be paid to educating users about the benefits of such services.

Provide subsidies if necessary for sustainability. Despite being pro-poor over the long run, cost recovery may imply prohibitive tariffs for some poor customers. In such cases smart subsidies (see above) can be used to promote access, affordability and sustainability.

Strengthening capacity and private sector management

Increase capacity to manage and maintain infrastructure facilities and services. Limited capacity for infrastructure management and maintenance is a major problem in partner countries, especially at local levels. Legal and regulatory frameworks should match local implementation capacity and local governance systems. But to improve outcomes for the poor and enhance efficiency, the best approach may be to establish strong service providers (public, private or public-private partnerships) that can meet agreed performance criteria, manage services following commercial principles and operate independently, transparently and accountably. Thus, over the long term, efforts should be made to strengthen the capacity of central and local agencies to manage procurement needs and operation and maintenance contracts.

Develop public-private partnerships. In the lack of reliable public services, the local private sector is the main provider of infrastructure services in remote rural areas (as with decentralised hydropower plants and telephone services based on the model used by Bangladesh's Grameen Bank), cities (urban and peri-urban transportation) and slums (water vendors). Although most private providers are efficient and effective in providing services to the poor, affordability and social equity are often compromised. Public-private partnerships can balance the need to increase access and affordability with the need to improve cost recovery and provide more appropriate payment procedures for poor customers. To date, however, there has been little experience with public-private partnerships for informal provision of infrastructure services. Pilot projects could be used to investigate this possibility.

Enhancing transparency and addressing corruption

Improve procurement and contract management. Well-designed infrastructure procurement can have significant direct effects on poverty reduction – for example, by creating employment through labour-based construction. Transparency is especially important in procurement. Good procurement practices include promoting open competition, setting and disclosing specific bid criteria, defining clear lines of authority, assigning specific responsibilities to individuals at each level, disseminating information on procurement performance, requiring regular reports and independent audits, and imposing sanctions for misconduct and malpractice. In addition, corruption can be addressed in contract implementation, monitoring and enforcement. Preventing petty corruption at lower administrative levels is also crucial in this context.

Promoting environmental sustainability

Environmental protection is key to fostering sustained growth and addressing climate change. Water contamination, air pollution and uncontrolled natural resource extraction harm the poor disproportionately and increase poverty. To improve environmental sustainability and address climate change, there is an urgent need to address the links between infrastructure and the environment. Of particular importance is enhancing the capacity of infrastructure bodies to integrate environmental (and social)

concerns in their planning and better link this to pro-poor growth efforts. In addition, environmental impact assessments for small infrastructure projects have received less attention and should be required.

Encourage sustainable management of resources through price accounting for environmental externalities. Sustained growth requires sustainable resource management. Various steps can be taken to contribute to pro-poor growth and environmental sustainability, including measures that discourage waste and misuse, improve collection of taxes and tariffs, introduce use of the “polluter pays” principle, provide incentives for companies to adopt environmentally sound production mechanisms and include environmental safeguards in contracts. Partner governments often do not fully pursue these measures. Such measures can be implemented by adopting pricing strategies that take into account positive payoffs, such as improved health resulting from clean water or reduced accidents through safer public transport. Decentralisation, user participation and demand management are key elements of sustainable resource management. Integrated water resource management and integrated land use planning are examples of this approach.

Defining the role of donors: Enhance sustainability

To enhance the sustainability of infrastructure investments, donors should:

- i) Emphasise the crucial role of maintenance and sustainability in preserving the value of infrastructure assets. Strengthening such efforts in partner countries requires funding, technical assistance and capacity building.
- ii) Help partner countries establish systems that recover costs and collect tariffs, while taking into account poor people’s ability to pay.
- iii) Support – before services are extended – improvements in the management of public service providers, to reduce commercial and technical losses and thus lower costs and make services more affordable.
- iv) Foster public-private partnerships to enhance project efficiency and improve sector governance.
- v) Strongly support initiatives that promote transparency and reduce corruption.
- vi) Promote environmental impact assessments and parallel measures linked to social concerns, and encourage sustainable resource management through price incentives.

Principle 4: Increase infrastructure financing and use all financial resources efficiently⁸

Increased infrastructure investment – particularly in maintaining and expanding services – is an essential element of a comprehensive PRS-based public expenditure programme and critical for achieving sustainable, pro-poor growth. Given the huge infrastructure backlog in partner countries and the limits of public finance, more innovative approaches are needed to tap possible resources. This includes improving public resource management at all levels, increasing private participation and strengthening local financial systems. The challenge for donors is to make infrastructure investment easier for governments and private actors.

Raising public investment and enhancing the effectiveness of sector investment

Reduce risks for infrastructure investments and minimise transaction costs.

Improved macroeconomic and fiscal balance provides more fiscal space for publicly financed infrastructure. Two issues are especially important: the solvency of public infrastructure bodies and financial sustainability at subsovereign levels. First, payment arrears and unpaid or uncontrolled consumption of infrastructure services (notably in water and electricity) strongly undermine economic and social development in many partner countries. Effects include poor service quality, insufficient maintenance and delays in extending needed investments – making them more expensive. Second, incomplete decentralisation leaves local governments with responsibilities but no funding and limited capacity to manage and maintain infrastructure facilities and services. For community-based and district infrastructure services, insufficient resources prevent user participation and in kind contributions of labour for construction and maintenance. To facilitate infrastructure investment, these constraints must be eased – with the help of donors.

Prioritise public spending. Partner governments must prioritise their spending on infrastructure (including for maintenance) to ensure the greatest impact on increased access by the poor and on pro-poor growth. A two-pronged approach is required. First, public resources should be used for investments (including maintenance) that may have inadequate financial rates of return but that have high social impacts, promote long-term sustainability and cannot be financed by private resources. Second, private resources should be mobilised for needed investments with higher rates of return. This approach requires partner country governments to conduct good economic and social assessments and to have the technical capacity to prioritise investments. In addition, innovative financing instruments can be used to facilitate increased public spending on infrastructure and better match sector needs.

Make financing predictable. Because infrastructure requires huge investments and careful planning – both at the outset and to ensure sustainable operation and maintenance – long-term predictability of public investment (including aid) in the sector is required. Increased clarity is also needed on private investments and credit enhancements to secure additional funding.

Leveraging private investment

Address constraints to private participation – domestic and international. Private investment in infrastructure is mainly long term and carries risks that must be adequately rewarded. It requires that investors have the ability to identify obstacles to market development, strong bargaining and management abilities to overcome them and solid financial capacities. It also requires a sound local financial system able to meet the long-term needs of investors and a strong and transparent regulatory environment. Finally, it requires that governments share the risks. Most partner countries fail to meet these requirements. To overcome these constraints, five issues must be addressed:

- i) *Development of a sound institutional and financial environment.* Many countries require judicial reform to enforce laws and reduce corruption. Better legal and regulatory frameworks and transparent, accountable regulation and management are also needed at various levels, with significantly increased capacity and resources. Land market reforms – including modernisation of land registries and legalisation programmes – would significantly aid in the creation of domestic collateral and bankable credit. Such

reforms should take into account the transaction costs involved, which must be affordable for the poor.

- ii) *Promotion of private initiative through reinforcement of financial sector intermediaries.* Training and other technical assistance – for example, to improve credit analysis and monitoring – are needed to increase the capacity of domestic banks to provide loans for private investments, including to small industries, and for municipalities and decentralised units. Assistance is also needed to develop domestic capital markets. In addition, more attention needs to be paid to neglected infrastructure service providers, because financing programmes and private sector promotion activities often do not reach this group.
- iii) *Better management of public infrastructure bodies.* Four aspects are important: adopting management rules inspired by private sector practices, to be free from political influences; developing subcontracting to promote domestic private sector development; unbundling these public bodies to involve the private sector (domestic or foreign) in less risky activities; and supporting country units for public-private partnerships. A range of options is possible, including management contracts, leases, concessions, and build-lease-transfer (BLT), build-operate-transfer (BOT), and build-own-operate-transfer (BOOT) schemes. Governments may need assistance selecting suitable frameworks for private involvement, particularly to identify and resolve the trade-offs between costs and benefits in the context of poverty reduction.
- iv) *Use of guarantee mechanisms to back up long-term contracts,* such as provision of guarantees by export credit agencies, multilateral and bilateral agencies or other official players, political risk insurance, co-financing and on-lending, equity or equity insurance, swaps from local to hard currency and advisory services. Such mechanisms have already been applied to private investment by multinational private companies.
- v) *Regulation inspired by private sector practices.* Although involving the private sector can increase efficiency, it also imposes costs. Writing contracts, conducting international bidding, monitoring compliance and writing regulation are expensive because they usually involve hiring foreign advisers, investment banks and so on. Thus there is a minimum efficient scale under which some private approaches are impractical and other, cheaper ways of involving the private sector should be considered (for example, management contracts might be cheaper than BOT bids).

Defining the role of donors: Increase resources and improve their use

To encourage broader and better involvement by the foreign and domestic private sector – as well as central and local governments – in infrastructure financing, donors should:

- i) Provide predictable, long-term official development assistance.
- ii) Support a diverse mix of financial instruments, including credit enhancements (guarantees, co-financing, swaps from local to hard currencies) and investments in public-private partnerships.
- iii) Provide technical assistance to build capacity in capital and financial markets and develop regional, national and subsovereign financing mechanisms for infrastructure.

Notes

1. DAC's POVNET is developing a methodology to harmonise poverty impact assessments for all donors.
2. Klump and Bonschab (2004) provide an interesting example in a study of Viet Nam, which took a determined approach to infrastructure planning – targeting a densely populated area (with a large majority of poor households) to maximise pro-poor growth and ensure redistribution to the poor through fiscal and other (non-infrastructure) measures. China's poverty reduction approach under its Go West strategy is another example.
3. The POVNET Task Team on Private Sector Development has produced related guidance on financial services and assistance as well as on business development services (2005a and 2005b). Refer also to the guidance by the Committee of Donor Agencies on business development services (2001), often referred to as the "Blue Book".
4. There is some empirical evidence challenging this assumption; a flat tariff combined with a lifeline tariff may be more beneficial for the poor.
5. This paragraph draws on, among other sources, GENDERNET (2004).
6. This paragraph draws on, among other sources, Wiman and Sandhu (2004) and the findings of the DAC POVNET working group on risks and vulnerability.
7. This section draws on, among other sources, Estache (2004a).
8. This section draws on, among other sources, Osius and Carlson (2004a; b) and Curtis (2004).

Chapter 3

Implementing the Guiding Principles in Sector Support

This chapter deals with the implications of the four guiding principles (Chapter 2) for the four infrastructure sectors that are the focus of this study: transport, energy, information and communication technology, and integrated water resource management, including irrigation, water and sanitation. It describes each sector's role in poverty reduction, then elaborates each principle's application to the sector.

Transport¹

Transport infrastructure (roads, railways, sea, river and airports) enhances the production and trade potential of local, national and regional economies. It also facilitates access to economic and social services essential for reaching the MDGs. But transport costs are high – due to inadequate facilities and the weak services that result – in many regions, especially sub-Saharan Africa, posing a major obstacle to growth and poverty reduction. Urban areas in particular may suffer if their rapidly growing demand for transport is not met. Yet far too often, partner countries fail to address transport-related challenges:

- i) Vast areas of rural hinterlands and urban slums are not served by adequate transport infrastructure.
- ii) Maintenance, which involves high recurrent costs, is rarely performed due to weak sector management, irregular funding and the difficulty of recovering such costs from private users.
- iii) Badly maintained transport networks exacerbate environmental and health problems such as pollution (including more greenhouse gas emissions), wasted energy resources and the spread of HIV/AIDS – all of which take a disproportionate toll on the poor.
- iv) Responsibilities are often splintered among several ministries, impeding effective co-ordination and sector governance.

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

Strengthen transport planning and management. Because transport requires huge, long-term investments, effective planning is crucial. But in many partner countries sector responsibilities are spread among ministries (transport, public works, agriculture) and levels of governments, making co-ordination difficult. Thus an essential first task is to reorganise and co-ordinate the various public bodies involved in transport. Otherwise it will be extremely difficult to optimise investments, ensure that transport assets are maintained, fight corruption, collect regular and reliable data, and monitor and evaluate programmes. One important step, already taken by many partner countries, involves separating the policy functions of government from the planning functions of road management by creating road funds and autonomous, commercially oriented management agencies.

Establish coherent, economically viable core transport networks. A comprehensive network approach should be used to face the challenges of the transport sector – to open up the entire country, rural and urban, and facilitate its economic integration with the surrounding region. Accordingly, this approach should be tied to the country's poverty reduction strategy and overall infrastructure plan. A coherent, economically viable core transport network includes regional corridors, national trunk roads, feeder roads, and links between roads, railways, and sea, river and airports. Regional bodies and their member countries need to pay particular attention to enhancing international and regional trade through ports, railways and bridges – including by removing non-physical barriers such as

cargo handling delays at ports and informal user charges by local governments. The transport needs of landlocked countries also require extra attention, especially road corridors and transit arrangements.

Improve urban mobility to foster sustainable growth. In 2020 more than half of the world's population will live in urban areas, and most of the fastest-growing cities are in partner countries. Urban demand for transport is growing rapidly, spurred by population and economic growth. If this demand is not met, urban prosperity will be hindered. Integrated responses include promoting non-motorised transport, providing public transport (in line with considerations of affordability for the poor), and integrating spatial and transport planning. In addition, transport demand management based on economic instruments (such as tolls) and other measures can be used to relieve congestion.

Rationalise transport charges through regulation and private sector mobilisation. Getting service charges right is a key challenge. In many (mostly Asian) countries transport charges do not reflect internal costs of service provision, let alone external ones. Yet in other cases, charges are too high. Increased competition through service privatisation can lower transport charges, particularly in modes (such as railways) that have tended to be regulated by governments. Fair competition requires that independent regulators supervise all modes and handle cross-cutting issues. Because sector reforms are politically sensitive, interventions should focus on their smooth adoption and promote well-targeted interventions that benefit disadvantaged groups.

Principle 2: Enhance infrastructure's impact on poor people

Transport – essential for growth. Numerous studies have highlighted the importance of transport for growth (Willoughby, 2004a; works by the European Commission and others on the Sub-Saharan Africa Transport Program;² ADB, JBIC and World Bank, 2005). Many countries with access to sea ports have used their comparative advantages to become major exporters. (Countries have also increased trade by establishing appropriate regulations for its liberalisation.) Similarly, long-distance railway systems help deliver bulk goods to foreign markets. The elasticity of partner countries' international trade, relative to transport costs, is high. The median landlocked country faces transport costs about 50% higher than the median coastal country; as a result its trade volume is 60% smaller.

Link transport to social services. Transport difficulties inhibit poor people's access to health and education facilities. Accordingly, the social MDGs (2-6) indicate the need to improve transport services and facilities, and to link investments in transport with those in health and education. For example, reliable transport and communication services are a key reason maternal mortality rates have fallen in many countries, and health investments provide only additional benefits. Similarly, poor children's (mainly girls) school attendance – particularly in secondary education – is highly dependent on affordable transport services, with manageable distances and times from their homes. To strengthen the links between transport and poverty reduction, increasing use is being made of cross-sector accessibility planning at the district and community levels. Such planning takes into account all modes of passenger and freight transport, motorised and non-motorised. Community-driven development activities can help identify and ease bottlenecks.

Promote affordable, inclusive transport services. The issue of affordability has to be examined relative to poor people's income levels, existing infrastructure capacity and access, and supply and maintenance costs. Smart subsidies, such as cheap school

transport, allow services to be extended to poor users. In urban areas more comprehensive efforts to make transport accessible to all population groups involve promoting extensive and affordable rail- and road-based mass transit, and easier and safer non-motorised and informal transport services, particularly in slums. This approach implies taking into account the specific needs of poor women and men, children, the elderly and the disabled – that is, the needs of pedestrians and non-motorised transport – by installing basic accessibility mechanisms (such as ramps, rails, easily understood signs, pedestrian roads and accessible information). In rural areas intermediate modes of transport are more important, both motorised (such as small pick-ups) and non-motorised (such as bicycles, ox carts and wheelbarrows for fetching water). Thus making transport widely available in rural areas requires complementary measures such as providing financial assistance to acquire non-motorised vehicles and co-operating with private and farmer associations.³

Create employment and income opportunities. Transport can expand employment and income opportunities, up to a certain point, by involving poor women and men in the rehabilitation and maintenance of transport infrastructure and by promoting women's equal access to transport jobs (as engineers, planners, drivers and shopkeepers, for example). This approach requires choosing appropriate standards and designs, making optimal use of local resources (labour, equipment, materials), using local contractors and consultants, and supporting local construction industries.

Facilitate cross-border transport and regional trade. In many countries the core poor – often indigenous groups – live in remote areas, often bordering other countries. Such villages are not always accessible year round and are isolated from economic activities and social services. Improving transport facilities, such as community access roads and their connections to the main network, raises these people's productivity by providing access to markets and income opportunities and by stimulating economic activities. Indeed, in the poorest villages the presence of a road substantially increases a resident's chances of escaping poverty. Similarly, cross-border transport infrastructure – particularly roads, bridges and ferries – facilitates trade and social exchange among groups separated by borders. Geographic targeting of transport infrastructure is thus essential to making investments pro-poor.

Protect health and improve road safety. Protecting health in the transport sector has three dimensions: improving road safety, reducing local air pollution and containing the spread of HIV/AIDS. Poor people suffer more from such problems:

- i) Traffic accidents injure 12-34 million people a year in less-motorised countries – an exceptionally high number given that the global total is 23-50 million – and sharply increase household poverty, particularly in urban areas. Globally such accidents kill 1.2 million people a year (often children and the poor), more than die from many communicable diseases. In addition, efforts are needed to improve the safety and security of transport users and pedestrians (Wiman and Sandhu, 2004). A priority is to strengthen institutions responsible for transport safety.⁴
- ii) World-wide, local air pollution kills up to 3 million people a year. The transport sector generates a lot of this pollution. Comprehensive approaches for reducing pollution include promoting public and non-motorised transport, upgrading technical requirements (such as requiring the use of unleaded fuel) and implementing demand management measures such as local pricing schemes.
- iii) Because transport is a major vector for the spread of HIV/AIDS – and high-risk groups include construction and transport workers and people living along roads and

highways – transport interventions should include support for HIV/AIDS prevention. Examples include awareness campaigns for traders and the construction industry.

Principle 3: Improve management of infrastructure investment, to achieve sustainable outcomes

Enhance management arrangements for maintenance. Specialised central road agencies, supported by provincial and local agencies, have proven efficient for road management. These institutions often outsource tasks to independent performance-based road agencies, contract management agencies, private actors or communities. In addition, decentralised and privatised road management agencies have been created, and have been more effective at conducting road maintenance than public bodies. Financing of maintenance (usually in the form of road funds; see below) is based on the “user pays” principle. If central financial and technical support is required, decentralisation of maintenance supervision appears to be an appropriate solution to lower costs, fight corruption and promote the local private sector, by involving local stakeholders such as farmer and community associations and traditional local rulers. Provisions for the administration and financing of network maintenance are a core element.

Protect the global climate. The transport sector generates negative effects on health and the environment that harm the poor first. Major concerns include the sector’s contributions to climate change, greenhouse gas emissions and rising energy consumption. Reducing these effects requires comprehensive approaches. Incentives for energy-efficient vehicles can help. In addition, environmental damage caused by road construction, such as soil degradation and forest destruction, can be mitigated when planning road network expansion. Prioritisation of transport modes should be based more on environmental criteria (for example, pursuing investments in “clean” rail before roads).

Build capacity to improve transport performance. Capacity building is a highly effective way of improving transport performance. At the individual level, it transfers knowledge and best practices to decision makers and professionals in partner countries. Capacity building that involves collaboration with private sector initiatives (such as vocational training) is also extremely effective. At the institutional level, capacity building helps partner countries analyse shortfalls in decentralisation of service provision and promotes regional co-operation among agencies. Examples include schemes related to inspections of axle loads, common road safety standards, creation of independent road authorities, and development of local construction industries.

Principle 4: Increase infrastructure financing and use all financial resources efficiently

Use careful planning to augment public financing with increased donor support. Between 2005 and 2010 annual investment needs in the roads sector alone total USD 90 billion, of which more than half is for maintenance (Fay and Yepes, 2003). More programme-based financing and sector-wide approaches are needed to fill this backlog. Although increased private and government investments are needed for transport infrastructure, particularly for roads in Africa, donors have a key role in scaling up financing over the next 10 years. Governments can attract increased donor funding by demonstrating commitment to regular sector dialogues and by adopting balanced and coherent sector strategies, carefully prioritised programmes and good sector governance.

Pursue private investment. Private involvement in the transport sector can scale up investments, free public funds for other sectors and increase efficiency. Although private

provision of transport services and execution of infrastructure projects are common, private funding of infrastructure facilities is often limited by the size of such investments. However, public-private partnerships such as build-operate-transfer (BOT) schemes are being used for investments such as channel dredging, rail track construction and air navigation facilities. Public-private partnerships offer further possibilities (such as concessions, BOT and other modalities) for toll roads, container terminals and railways. And while in many cases it may not be possible to attract private investment in new infrastructure facilities, there are several examples of private investment in upgrading transport systems under long-term management and maintenance contracts.

Support road funds to improve maintenance funding and execution. Although nearly all partner countries have some sort of budgeting system for road maintenance, these budgets are often under-funded, vulnerable to interference or not respected. To address these shortcomings, since the late 1990s many partner countries have established road funds. Resources can be raised from users through improved tax collections and through charges such as licence fees, registration taxes, fuel taxes, axle overload fines and road tolls. If efficiently controlled (with monitoring and auditing of expenditures), these resources can cover the costs of maintenance needs. In addition, contracting of maintenance works to private enterprises (preferably local) has produced positive outcomes, especially where support has been provided to strengthen such enterprises. Performance-based maintenance contracting – where contractors are expected to maintain certain road conditions under periodic contract – has also been used with good results, and can be applied to all transport modes.

Strengthen financing of local roads. The transport sector must balance investments among the priority network of inter-state and inter-urban roads, the longer but less used secondary and unclassified networks, and urban networks. Local governments must receive regular funding to ensure maintenance of local roads. These funds can be provided by allocating road fund revenues to local authorities and by mobilising community resources, including municipal bonds and in-kind contributions. The share of road fund revenues (and other budgets) should be based on inventory and condition surveys, and tailored to local capacity to spend resources.

Defining the role of donors: Support public financing, including maintenance

In the transport sector, donors should:

- i) Strengthen co-ordination among administrative bodies and their public investment programmes to comprehensively and equitably address new investment, maintenance, services and urban mobility as well as increase public and private investment.
- ii) Promote comprehensive, economically, socially and environmentally justified networks, including cross-border networks.
- iii) Encourage a service-oriented approach to optimise use of available resources, public and private.
- iv) Strengthen institutional arrangements and capacity for maintenance by promoting the “user pays” principle.
- v) Encourage local private provision of services and development of local industries for construction and maintenance of facilities.
- vi) Address health, safety, environmental and social concerns, including impacts on and needs of vulnerable groups.

Energy⁵

Reliable, modern energy services are essential for inducing economic growth and improving the living conditions of the poor. Yet most poverty reduction strategies have paid little attention to energy. Large electricity generation, transmission and distribution projects primarily benefit industry, urban populations and agricultural users, while most rural and poor people depend on biomass for cooking and, in some countries, for heating. As a result the poor usually spend more time and money on energy services, and such services tend to be of low quality. In addition to its security and safety dimensions, energy has local and global environment dimensions, and can negatively affect human health – particularly through indoor pollution. Modern energy supplies strengthen poor people's productive prospects and social infrastructure such as health and education services, and are relevant to increasing gender equality and achieving the MDGs. Renewable sources can offer cost-effective ways to increase access to energy in remote areas, mitigate climate change and contribute to economic development. They also diversify energy supplies and hedge against spikes in fuel prices.

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

Recognise the essential role of government. During the past decade many partner countries introduced energy policies intended to shift financing and operational issues to the private sector. But private participation did not develop as expected. Thus governments continue to have an essential role where energy markets are weak and investments in medium- and long-term energy development are needed. Such governments should focus on the linkages between energy and social and economic priorities, the development of long-term energy security plans and the contribution of energy to job creation and income generation. Regulatory frameworks should be transparent, promote sustainable energy services and balance the interests of producers and users, including the poor. In addition, to provide a basis for donor involvement and co-ordination, national poverty reduction strategies (PRs) and budgets – including MTEFs – should pay more attention to energy and related issues.

Use different approaches in different environments. In urban and industrial areas of many partner countries, well-managed electricity utilities and fuel distributors are able to deliver services on a commercial basis to meet the growing needs of industrial, public and household customers, including those in informal settlements. Where conditions are favourable – with sufficient population density, commercial development and potential electricity load – rural electrification programmes, developed in conjunction with other local development measures, are a viable option. In remote and poor rural areas where grid extension is too expensive, decentralised renewable energy systems (household solar systems, wind chargers, biogas digesters) can be deployed for basic electrification. Biomass (and its efficient use) and forestry management should be an integral part of energy supply strategies.

Promote pro-poor regulatory reform. Strong government commitment and a focus on protecting the interests of the poor through transparent policies are common features of reforms that have produced positive results for electrification of the poor. Pro-poor energy reforms must enhance involvement by the private sector and by representatives of the poor. Reforms should be sequenced to ensure that structures and rules are in place before, or at least at the same time as, large-scale market-oriented reforms (such as privatisation) are

initiated. Pro-poor impact and long-term sustainability must be taken into account when costing energy investments and services, while also ensuring that power providers are financially sustainable. Finally, government contracts with private operators should include incentives to provide sustainable, affordable services for the poor – for example, by awarding bonuses for connecting poor areas, leaving collection to the private operator and so on.

Support regional and cross-border initiatives. Energy resource reservoirs are location specific, and their capacity and viability vary based on their proximity to major consumption areas – which sometimes cross borders. Achieving economies of scale in energy supply and distribution requires regional and cross-border approaches, particularly for electricity and natural gas. This can be the case for large hydropower and geothermal sources as well as for interconnected national and regional distribution grids. Small cross-border hydropower schemes also have good potential, especially for remote and poor areas. To develop such potential, energy market mechanisms must be encouraged, based on strong political commitments to regional co-operation and to regulatory reforms in the countries concerned.

Principle 2: Enhance infrastructure’s impact on poor people

Focus on productive energy uses and better services for social infrastructure. To establish cost-effective energy supply policies that foster pro-poor growth, better understanding is needed of the structure of demand for energy services. Energy development policies should take into account energy sources that meet the final forms of energy used by the poor – for example, for productive appliances, lighting, cooking and transport – rather than merely focus on provision of electricity supplies. Increasing productive uses of energy must be an integral part of development plans. To boost local income generation, energy services should be accompanied by business development services (such as financial services and access to markets).⁶ Energy services for social sector activities, including power for health facilities, schools, water supplies and street lighting, should be considered public investments in human capacity development and well-being.

Increase poor households’ access to safe, reliable energy by lowering the costs of cleaner, more sustainable energy sources. To facilitate such access, subsidies and other financing schemes can be used to reduce the upfront costs of connecting to local power grids (such as costs of electricity meters and other connection instruments) and of financing decentralised renewable energy systems. But for many poor women and men, especially in rural areas, biomass may continue to be the primary source of energy. Thus steps should be taken to help mitigate the significant safety and health risks (such as indoor pollution) – for example, by promoting the use of more efficient stoves.

Choose the most appropriate modern technology for the poor. Where grid electrification is not economically viable, decentralised renewable energy systems can offer cost-effective access to modern power for productive uses. Renewable energy options also reduce negative environmental externalities and increase energy security. Investment decisions and technology choices should be based on overall (life-cycle) least cost analyses.

Principle 3: Improve management of infrastructure investment, to achieve sustainable outcomes

Aim for effective cost recovery and tariff collection. Increasing the sustainability of energy services requires a range of efforts, including effective cost recovery and tariff collection, pro-poor regulatory reform, increased institutional capacity, greater energy

efficiency and attention to environmental considerations. Where profits are not achieved and costs are not recovered – the implications are inefficient supply systems and eventually failing companies. Cost recovery requires appropriate tariffs and efficient mechanisms for collecting them. For social or development considerations, tariff structures may include cross-subsidies for basic services of poor customers. But financial losses due to non-payment, including by large consumers such as governments, must be addressed. One solution is to introduce meters, to help ensure payments based on consumption. Tariff collection can also be improved by introducing information and communication technology and by fostering the participation of beneficiaries in power distribution co-operatives and tariff collection efforts.

Increase energy efficiency. Inefficient energy generation, transmission, distribution and use result in financial losses, high production costs and environmental burdens. A precondition for increasing energy efficiency is that tariff structures provide incentives for saving energy and using it efficiently. Most energy suppliers fail to provide consumers with sufficient information on how to increase energy efficiency.

Strengthen management autonomy and institutional capacity. Regulators should protect the commercial operations of energy providers (public and private) from political intervention. When providers have weak institutional and technical capacity, it results in unreliable energy supplies and commercial failures – with strong negative impacts that harm the poor first. In such cases regulatory frameworks and incentives should aim to strengthen commercial principles and bolster institutional and technical capacity.

Address environmental concerns. Fossil fuel consumption causes local and global environmental damage that is generally not accounted for. Using more renewable energy sources and enhancing supply- and demand-side energy efficiency are general strategies that address cost-effectiveness as well as environmental concerns. Nevertheless, environmental impact assessments should be required not only for thermal power plants but also for systems using renewable energy sources, including hydro, wind and photo-voltaic.

Principle 4: Increase infrastructure financing and use all financial resources efficiently

Leverage more foreign private investment. The energy industry is highly capital-intensive. Where financial rates of return in the sector are positive, involvement by private actors (domestic and foreign) should be encouraged. To foster such investments, governments should share more risks for both large and small initiatives, using financial instruments such as guarantees. While foreign private investors tend to focus on large generation projects, domestic private actors – including co-operatives created by beneficiaries – are better suited to handling local distribution networks. Over the long term, well-designed public-private partnerships can increase private investments, enhancing efficiency and financial sustainability in the sector.

Improve regulation. The public sector can reduce risks for private investors by improving the regulatory environment and paying more attention to the accountability, transparency and monitoring of energy service providers. Further development of risk mitigating measures (such as guarantee funds), acceptable to both the public and private sectors, can deepen such efforts.

Defining the role of donors: Support government's role in planning, regulation and investment

To enhance the pro-poor growth and poverty reduction impacts of their support for energy infrastructure, donors should:

- i) Support investments in grid extensions and in areas where providing energy services is unattractive to private investors but necessary from a social perspective – as long as operation and maintenance costs are covered whether by tariffs or temporary subsidies.
- ii) Support reforms and regulations that encourage efficient power use and result in tariff collection policies that attract private investment.
- iii) Promote cross-border energy initiatives.
- iv) Adapt energy supply technologies (including biomass) to productive uses, particularly among the poor.
- v) Support efforts to improve poor households' access to safe energy, such as biomass, when modern energy cannot be provided cost-effectively.
- vi) Provide accompanying measures, such as micro-finance schemes, to increase poor people's access to appropriate energy services.
- vii) Strengthen the management capacity, including for transparency and accountability, of all energy sector entities.
- viii) Address concerns about environmental sustainability, energy security and access to modern energy in remote areas by promoting renewable energy sources and energy efficiency.

Information and communication technology⁷

Information and communication technology (ICT) is a powerful cross-sector tool for promoting pro-poor growth – by saving time and money through more efficient communication and by supplying strategic information on market prices, risk warnings, job and learning opportunities, service and product availability, and so on – as well as good governance and effective management. ICT also supports better planning and delivery of economic and social services. Although governments and donors have largely withdrawn from the sector, basic ICT network facilities and services remain public goods and require continued public support. And despite increased private involvement, ICT's potential is far from being fully exploited, let alone universally available – especially in rural areas of low-income partner countries, which private service providers avoid because of low profits and high investment risks. Rolling out telecommunications networks and providing affordable services, especially in remote areas, remain major challenges.

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

Emphasise the public sector's role. In many partner countries neither public nor private investment alone is sufficient to establish inclusive, universal communication networks capable of serving needs for economic growth. Trunk telecommunications networks require huge upfront investments and cannot always be financed privately. In addition, such networks must be established to reduce regional disparities in growth. Similarly, network expansion to low-density areas usually must be financed by the public sector. Thus the public sector should play a major role in planning and investing in trunk

and rural communication networks. To reduce initial investment costs, efforts should be made to create synergies between non-ICT infrastructure (rail networks, power transmission networks) and trunk network expansion.

Build links between ICT and other sectors. ICT increases the efficiency and effectiveness of all development interventions. When combined with other policy measures, ICT can provide innovative solutions to the challenges facing some poor households, such as remoteness and isolation. Thus ICT should be integrated with other sector strategies for infrastructure, both economic and social, and used during their planning and implementation.

Strengthen regulation and efforts to expand services. Well-designed regulation is critical to balancing efficiency and increased access to and affordability of ICT services, and to encouraging private investment. The public sector must ensure that regulation is transparent and free from political influence. It must also provide incentives for the private sector to expand services to less profitable areas. Small operators should be allowed to use networks owned by big ones, paying cost-based or, in remote or rural areas, preferential interconnection rates. Lessons in these areas are available from studies being conducted by InfoDev.⁸

Support regional co-operation. ICT development can be promoted using an area-based approach. Particularly with mobile phone interconnections and cross-border connectivity – whether through fibre optic cables or satellites – economies of scale cannot be achieved without regional and international integration and co-operation.

Principle 2: Enhance infrastructure's impact on poor people

Use ICT to support income-generating activities. Partner governments often heavily underestimate ICT's importance for poor people, despite many innovative uses that have contributed to their income potential. Examples include e-commerce activities, electronic cash systems in remote areas, weather forecasting systems for poor fishermen and electronic price systems allowing poor farmers to compare commodity prices in different markets.⁹ Such initiatives, including limited financial support for equipment purchases, can be part of rural or commercial development programmes targeted at the poor.

Use ICT to promote gender equality. The Grameen Bank's village mobile phone programme has provided business opportunities for poor rural women in Bangladesh, helping them increase their incomes and enhance their status.

Principle 4:* Increase infrastructure financing and use all financial resources efficiently

Support universal access funds. Universal access funds aim to extend telecommunications services to rural and other poor populations. Such funds are often financed by telecommunications providers (through levies on revenues) and managed by regulators. Minimum subsidy auctions are a good way of awarding contracts for these funds to private operators.

Defining the role of donors: Promote ICT in other sectors and invest in trunk and rural networks

To increase ICT's contribution to pro-poor growth, donors should:

- i) Support planning and investment in backbone infrastructure – particularly trunk and rural communication networks – and increased access through innovative financing facilities and network sharing arrangements.

* No comments have been made about Principle 3.

- ii) Link ICT programmes with activities in other sectors, particularly those that promote productive activities for poor people.
- iii) Support ICT policy making and regulation, including enforcement mechanisms.¹⁰

Water (integrated water resource management, drinking water, sanitation and irrigation)¹¹

Water is a basic necessity, essential for life. Although this makes it highly sensitive politically, it does not confer it the status of a public good because its supply entails costs. It is directly linked to agriculture, food security and health as well as environmental, gender equality, social development and many other issues. In partner countries irrigation accounts for 85% of water consumption and the distribution of water-related services is extremely unequal, with urban consumers often receiving much more reliable drinking water and sanitation than their rural counterparts. Every year major water-related natural disasters – such as the recent floods in Bangladesh and China and the tsunami in south Asia – kill millions of poor people. Moreover, water scarcity and poor sector governance are causing severe tensions around the world – especially in the Middle East and Africa, where most water-stressed countries are located. Lack of clean water and adequate sanitation is the primary cause of disease and death in partner countries and severely undermines income generation. Achieving MDG 7 and its amendment calling for increased basic sanitation (adopted in 2002) is crucial. It has been estimated that funding for the water sector needs to double to meet needs (World Water Council, Secretariat of the 3rd World Water Forum and Global Water Partnership, 2003).

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

Link all water uses through integrated water resource management (IWRM). IWRM links all water issues – irrigation, drinking water, sanitation, power generation, water ways, floods and other disasters, industrial pollution – and stakeholders (including different countries, if international basins are involved).¹² IWRM also distinguishes between water values and tariffs: values reflect water uses and needs, while tariffs add an incentive aimed at achieving socially, financially and environmentally sustainable use. IWRM is thus an essential conceptual framework in the quest for the sustainable use of water for all and the control of flooding and pollution. National poverty reduction and other strategies must better recognise the importance of IWRM. There is considerable potential for improving integration of water-related policies and strengthening planning and co-ordination on IWRM.

Improve planning and facilitation of water uses and needs. Water policies and legal frameworks should arbitrate – through pricing and sharing – the social and productive uses of water and ensure adequate attention to water in strategies for other sectors. Responses to various water demands (for example, between urban and rural or household and industrial users) need to be well planned by central as well as local (subsovereign) governments. In addition, national drinking water policies should follow IWRM agreements on water intake and outlet. Analyses of water supply and demand (such as water sources and means of provision, or users' willingness to pay) and of current and future needs provide a sound basis for evaluating water challenges (including land tenure, water rights and cultural or religious issues) and identifying ways to address them. Integrated initiatives are needed, comprising water supply and waste water collection, treatment and disposal, as well as education on hygiene and water use.

Use IWRM to improve sector co-ordination, management and governance. Few partner countries have a sole public authority in charge of the water sector. Instead responsibilities are split among ministries, agencies and levels of government. Water management is more effective when sector co-ordination occurs under a lead agency. In addition, such co-ordination is essential to arbitrate conflicts arising due to water resources' finite and depletable nature. Co-ordination and arbitration are especially important for cross-boundary resources (basins, rivers), where only supra-national or external bodies can provide a structure for dialogue. Co-ordination also improves water governance by enhancing decision makers' accountability for resource development and management.

Plan new investment, rehabilitation and renovation of irrigation schemes in line with poverty reduction strategies. Irrigation is crucial for increasing agricultural yields and incomes, thereby improving livelihood opportunities for the poor. But irrigation schemes involve high investment and recurrent costs and have serious environmental impacts, making government intervention essential. Yet irrigation rarely features prominently in poverty reduction strategies. Given its role in reducing poverty, irrigation should be part of country strategies and donor agendas, with priority given to rehabilitation and renovation.¹³

Principle 2: Enhance infrastructure's impact on poor people

Co-ordinate irrigation with other rural development initiatives. To raise productivity, irrigation schemes must be accompanied by measures such as provision of access roads, market information and extension services. For a pro-poor approach, partner governments should provide "service packages" – coordinating efforts among planning, agriculture, transport, energy and environment ministries as well as decentralised irrigation agencies.

Use innovative approaches to make irrigation more affordable and sustainable. Small, farmer managed irrigation schemes benefit poor farmers in areas with a tradition of irrigated agriculture and market access. Approaches such as dry-land farming, water harvesting and flood recession farming as well as dissemination of demand management techniques such as irrigation water conservation (drip irrigation, for example) and waste water reuse help them, too.¹⁴

Encourage decentralised, participatory approaches in irrigation, drinking water and sanitation to strengthen management, sustainability and pro-poor outcomes. Especially in rural areas, drinking water and irrigation are likely to be managed or maintained (or both) by communities. Decentralisation or devolution of service provision enables much greater ownership and accountability. To be effective, decentralisation must be accompanied by appropriate financing provisions (that is, budget decentralisation). In addition, participation by all concerned stakeholders ensures that poor people's interests are voiced.

Promote sanitation for the poor. Water supply and especially sanitation involve strong externalities due to their direct links with health (for example, through pathogens), gender specific needs (for example, through women's and girls' need for latrines) and education (for example, through sanitation deficiencies in schools). These externalities are especially apparent in urban areas, where higher population densities increase health dangers, make sanitation more difficult and pose risks for vulnerable groups. The externalities generate a mismatch between high social (welfare) benefits and low private ability or willingness to

pay, and thus call for affordability-enhancing measures such as smart subsidies. It is also important to account for the gender dimensions of consumption and payment – within and across households – when designing facilities and services and setting and collecting tariffs. Finally, externalities call for integrated initiatives, addressing water supply and waste water treatment and disposal as well as education on hygiene and water use.

Use demand management to make piped water and sanitation more affordable. Technical and non-technical deficiencies of piped water and sanitation systems can hinder the application of metering and pricing mechanisms to such services, leading to water overuse, free-riding (for example, with illegal connections) and resource waste. Financially, environmentally and socially unsustainable water and sanitation services hurt poor people first. Demand management must be used to mitigate these problems, such as with pricing structures – for example, consumption charges (based on metering), pollution charges or both – restrictions, licenses, quotas or some combination. Adequate metering and demand management, ideally introduced with the participation and understanding of stakeholders, are pro-poor because they help make water and sanitation services affordable (by correcting deficiencies costly for society) and sustainable (by saving resources). Steps must also be taken to correct system deficiencies, such as unaccounted-for water and illegal connections.

Principle 3: Improve management of infrastructure investment, to achieve sustainable outcomes

Reduce price distortions to promote sustainability. There are wide gaps between the values and tariffs, as well as the private benefits and social costs, of drinking water, irrigation water and sanitation services. For example, pricing of (and demand for) irrigation water depends on its uses and particularly on international prices for agricultural commodities. In theory, pro-poor impacts of water investments can be maximised by charging tariffs as close as possible to “true” values – that is, values that reflect long-term social uses and costs. If found feasible, such tariff policy should be complemented by measures to increase affordability, such as smart subsidies, and mitigate negative externalities, such as environmental degradation.

Reform irrigation to improve management and sustainability. Top-down approaches to irrigation have resulted in low productivity or been unsustainable (or both). Partner governments are encouraged to introduce participatory irrigation management, which assigns operation and maintenance of irrigation facilities to user associations whose members are based on socio-cultural connections and norms.¹⁵ Farmer involvement in planning, designing and managing farm-level irrigation canals, as well as main or secondary canals, creates ownership and so facilitates collection of water fees and maintenance of irrigation systems, increasing sustainability. Women’s access to irrigated land promotes gender equality.

Encourage private involvement in drinking water and sanitation. Public water management often results in ineffective operation, unreliable supply, inadequate maintenance, red tape and favouritism towards certain groups of consumers. These deficiencies mainly hurt poor people because they have to pay more for water from individual sources or go without sanitation. More efficient, sustainable and equitable drinking water and sanitation supply has been achieved by combining private management with public oversight (as well as by decentralising service provision). Such arrangements – mostly public-private partnerships such as management or lease contracts or build-operate-transfer (BOT) schemes – increase efficiency and effectiveness,

and public oversight and regulation ensure attention to issues such as law enforcement, quality standards, equitable participation (especially by women) and land tenure. Most public-private partnerships involve multi-national corporations from OECD countries; greater efforts should be made to involve small, local providers in providing water and sanitation services.¹⁶

Focus on rehabilitation and renovation. If not properly maintained, water infrastructure is prone to damage and can cause environmental degradation. Too often, investments develop new water sources (including for drinking water, irrigation and sanitation) – further draining resources – instead of rehabilitating existing ones. Introduction of demand management makes better use of existing resources without developing new ones. All water investments should include budgets for maintenance. Support for agencies to strengthen management of investments and regulation of irrigation infrastructure – through technical assistance and capacity building – should also be considered.

Limit environmental damage. Systematic efforts are needed to reduce the negative impacts of irrigation, water and sanitation interventions on health, ecosystems and biodiversity, and land use and rights. In addition, infrastructure investments, particularly long-lived infrastructure such as dams, hydropower facilities, water supply and road networks, need to be screened to determine how their performance could be affected by risks related to climate change. Special consideration should be given to mitigating flood and drought dangers, which will likely multiply as a result of expected climate change. To address such dangers, irrigation and hydropower investments should be complemented by water management measures that, for example, create observation networks to measure precipitation, track river flows to improve flood prediction and develop other disaster prediction systems, such as tsunami warnings.

Principle 4: Increase infrastructure financing and use all financial resources efficiently

Expand financing for irrigation. Investment in irrigation has fallen even more than for infrastructure in general, and reduced donor support has undermined the potential productivity of many existing schemes. New financing mechanisms such as rehabilitation funds – financed by users, donors and/or national budgets – should be promoted. Another approach is for beneficiaries and the private sector to construct and rehabilitate secondary and tertiary canals, while governments focus on main canals and other large facilities.

Increase funding for drinking water and sanitation. Given the scale of needs and the importance of achieving the MDGs, financing for drinking water and sanitation must be increased. To maximise efficiency, funds should go to projects with potential for scaling up, whether through larger-scale programmatic financing or, possibly, public-private partnerships. In addition, innovative funding mechanisms for water and sanitation should be explored at local (subsovereign) levels. One possibility is revolving funds, which reduce the financial burden of connection costs by stretching repayments over longer periods while also using them to increase the number of beneficiaries (leverage effect). Financing constraints at local levels can also be overcome by promoting self-funding and by providing guarantees and risk sharing schemes. Guarantees provided by municipalities for other municipalities spread risks between local entities (a form of municipal solidarity and risk mutualisation).

Defining the role of donors: Adopt IWRM, increase irrigation investments, consider water tariffs and promote private involvement in water supply and sanitation

To enhance the poverty reduction and pro-poor growth effects of support for the water sector, donors should:

- i) Promote, using the IWRM framework, better co-ordination between central and decentralised levels to rationalise water use for productive purposes. To that end, donors should help develop and implement water (and land use) laws, regulations and other sector reforms.
- ii) Promote technical and economic assessments of and investments in irrigation, using common methodologies (particularly for investments covering multiple countries) and taking into account social and environmental issues.
- iii) Favour participatory irrigation management, to facilitate collection of tariffs that cover operation and maintenance costs and improve environmental security.
- iv) Strengthen public bodies responsible for water services and support their expansion only after their management has improved. Efforts should be made to stem technical and non-technical losses, encourage public-private partnerships, introduce demand management (such as metering, leakage control, conservation and reuse programmes) and support tariff policies that promote affordability (through smart subsidies, for instance), “polluter pays” principle and institutional sustainability.
- v) Encourage peri-urban and rural access to regular, low-cost drinking water by involving the domestic private sector under decentralised public structures.
- vi) Promote sanitation investment, capacity building and hygiene education.

Notes

1. This section draws on, among other sources, IDCJ (International Development Center of Japan) (2004).
2. The multi-donor funded sub-Saharan Africa Transport Policy Program (SSATP, at www.worldbank.org/afr/ssatp/index.htm) provides support to 26 African countries to conduct participatory processes in which national stakeholders (public, private, civil society) review the links and coherence between their national transport and poverty reduction strategies. The SSATP then helps countries revise their transport strategies to increase their contribution to poverty reduction.
3. The POVNET Task Team on Private Sector Development has produced related guidance on financial services and assistance as well as on business development services (2005a and 2005b). Refer also to the guidance by the Committee of Donor Agencies on business development services (2001), often referred to as the “Blue Book”.
4. The Global Road Safety Partnership has developed strategies to address health concerns in the road sector; see www/GRSProadsafety.org.
5. This section draws on, among other sources, ECI (Environmental Change Institute) (2004), Oxford University.
6. See Note 3.
7. This section draws on, among other sources, Batchelor, Woolnough and Scott (2004).
8. InfoDev is a global grant programme, managed by the World Bank, that promotes innovative projects using ICT for pro-poor growth (www.infodev.org).
9. In East Africa and Asia e-commerce helps poor indigenous communities in remote areas link to high-potential specialised world markets, as with the connection where upland communities in Lao People’s Democratic Republic sell herbal products to the Body Shop. Other examples of ICT benefiting the poor are Internet cafés located in road maintenance units in Bhutan, e-banking in Nepal and weather forecasts provided to fishermen in Tamil Nadu, India, and Tonle Sap, Cambodia.

10. See examples from the Public-Private Infrastructure Advisory Facility (PPIAF, at www.ppiaf.org), a multi-donor technical assistance facility aimed at helping developing countries improve the quality of their infrastructure through private sector involvement.
11. This section draws on, among other sources, Kraehenbuehl and Johner (2004) and Sakairi (2004).
12. At the World Summit on Sustainable Development (held in Johannesburg, South Africa, in 2002) the global community set targets for IWRM and water efficiency plans world wide.
13. Water and irrigation issues have also been analysed by the DAC POVNET Task Team on Agriculture.
14. See also the guidelines and examples of good practices on addressing vulnerability in the water sector in Wiman and Sandhu (2004).
15. Another method of reassigning management responsibility for irrigation systems is irrigation management transfer, where partial or complete management responsibility for subsystems or entire systems is transferred from governments to non-governmental organisations.
16. Moreover, the private sector has a rather chequered record on drinking water issues, as some projects in Latin America have shown. There is a need for better stakeholder information, stronger accountability and, as in irrigation, a definite role for user associations in implementing public-private partnerships for drinking water.

Chapter 4

Applying the Guiding Principles in Countries with Special Needs

Although this report's guiding principles have the same goals everywhere, they will need to be adapted to specific conditions in partner countries. This chapter explains how the principles should be applied in the most fragile low-income countries, including those suffering or emerging from conflicts or disasters, and in middle-income countries with deep pockets of poverty. It also addresses the role of regional and cross-border infrastructure, which is especially important for landlocked countries.

Addressing the needs of fragile and post-conflict states

Identify drivers of country conditions. Various terms such as failing or failed states or low-income countries under stress, fragile states have governments that are unwilling or unable to provide their people with security, protection of property, basic public services and essential infrastructure. Countries suffering or emerging from conflicts or human made disasters face additional problems. They often have weak or non-existent governance structures and systems, and large portions of their populations experience profound poverty, vulnerability, insecurity, ill health and disability. Such weaknesses usually also impose burdens on the economies of neighbouring countries. All these factors provide reasons for prioritising investment in fragile and post-conflict states.

Providing co-ordinated support to improve governance and management

Support governance institutions. In such states the first infrastructure-related task is to rebuild governance and administrative capacity at the central level. Thus long-term technical support aimed at increasing central authorities' capacity to manage infrastructure resources and programmes is essential. Where government capacity is weak, infrastructure services can be delivered by non-state providers, including non-governmental organisations (NGOs) and the private sector. Regional initiatives should be supported because they can help re-establish national governance.

Promote inclusive sector strategies. Country-owned poverty reduction and sector strategies can help build consensus and unity, and contribute to more effective political leadership and resource management. Support should be given to country-owned, inclusive processes of sector strategy formulation involving stakeholders. Moreover, care should be taken to avoid activities – such as bypassing national budget processes or constraining recruitment in national organisations by setting high salaries for staff of project management units – that undermine local capacity and institution building.

Expanding access and improving security

Restore core infrastructure and basic services. Governments in fragile and post-conflict states should focus on rehabilitating core infrastructure facilities and basic services, especially trunk roads, energy, water and sanitation. Careful sequencing is needed to improve absorptive capacity. Where efficient management is difficult, small-scale rehabilitation may be more viable than large-scale interventions. Strengthening what already works and building on self-help initiatives can be particularly useful.

Strengthen security and reduce vulnerability. Infrastructure investments should take into account territorial security, aim to reduce risks and vulnerability, and promote the safety of marginal populations – for example, by enabling food production in former conflict zones and creating employment opportunities for high-risk groups. Conflict assessments and alternative performance measures (such as progress on building peace and improving governance) should be included in programme assessments. Cross-border

infrastructure may be a particular priority in post-conflict countries, to ease tensions and rebuild co-operation between previously warring countries.

Managing and sustaining infrastructure

Increase capacity to manage and maintain infrastructure. Infrastructure maintenance is essential in fragile states, but its financing and management must be adapted to evolving governance and administrative capacity. For small-scale facilities, priority should be given to supporting communities and, where possible, subsovereign authorities to manage and maintain local infrastructure, making the best possible use of local resources. Although donor or NGO financing for service providers may be needed in the short term in some countries or subsovereign territories, it should be provided as a last resort – when no government or other local bodies can provide such functions. Responsibilities of independent service providers should be transferred to domestic institutions at the earliest opportunity.

Increasing infrastructure financing

Provide more reliable, predictable, co-ordinated aid. Because aid to fragile states is highly volatile, more reliable and co-ordinated flows are needed to stabilise governance structures. In post-conflict countries priority should be given to establishing faster procurement modalities, including pooled funds, to provide rapid support and facilitate disbursements. Aid should be accompanied by diplomacy, security guarantees, conflict reduction programmes and technical assistance.

Provide grants and no- or low-interest loans. To expedite growth and rehabilitate central financial governance, infrastructure aid should be in the form of grants or low- or no-interest loans.

Defining the role of donors: Support core infrastructure to strengthen governance

Donor support for infrastructure in fragile and post-conflict states should:

- i) Take the country context as the starting point.
- ii) Restore core infrastructure – using a co-ordinated, long-term approach – and applying basic design standards to increase access.
- iii) Rebuild governance and administrative capacity.

Reducing poverty in middle-income countries

Recognise the importance of middle-income countries for global achievement of the MDGs. Many middle-income countries have severe pockets of poverty in certain regions or among particular groups. Such poverty is often caused by high inequality (based on race, ethnicity, gender or other social grounds) and weak governance, including corruption, political exclusion and poor representation of citizen interests. These situations, which often result in political interference, may discourage involvement by the private sector and NGOs. Infrastructure support for middle-income countries must tackle poverty and inequality in an integrated way, involving all of society. Such countries receive more aid than is required to achieve MDG needs, but in many cases it does not help to reduce poverty. As a result some middle-income countries are reverting to low-income status.

Developing more comprehensive pro-poor strategies for infrastructure

Promote a pro-poor orientation in national development strategies. Donor dialogue with middle-income countries should focus more on strengthening government commitment to improve the pro-poor focus of national development strategies. Support should be given to strategies promoting growth in the poorest areas and to reforms improving governance and fostering private sector involvement through regulation. Technical support should aim at developing institutional capacity to reduce poverty and inequality in infrastructure policy and delivery and in fiscal, utility and sector reforms. Such capacity building could draw on South-South knowledge sharing as well as international expertise.

Build on country systems for environmental and social safeguards. Many middle-income countries have well-functioning procurement systems and well-developed social and environmental safeguards. Even if the standards used are not fully consistent with those advocated by donors, infrastructure provision under country-led approaches and systems can expedite implementation.

Reducing inequalities in access

Encourage integrated approaches while targeting marginal and excluded populations (such as indigenous groups and the disabled) when extending infrastructure networks and services. For example, an initiative could seek to increase financial sector support or enhance safety and health care in poor areas, particularly to address challenges such as HIV/AIDS, disaster recovery and environmental concerns.

Foster public-private partnerships. Local private actors should be involved as much as possible in managing and maintaining facilities and services in marginal areas. Public-private partnerships can extend services to poor areas at affordable prices and promote environmentally friendly development at central and decentralised levels.

Promote fair tariffs. Inequalities in middle-income countries are particularly high between groups and regions. Given that middle income countries can afford more social balancing, a pro-poor approach to extend infrastructure services should emphasise fair tariff collections, with cross-subsidies supporting vulnerable groups such as the disabled. Governments should ensure that tariff collections are free from political interference by bodies in charge of infrastructure services.

Leveraging more financing to tackle poverty

Ensure that investments in middle-income countries do not cut into support for low-income countries, particularly in Africa. Annual infrastructure investment needs for 2005-10 (for both new construction and maintenance) are estimated at USD 356 billion for middle-income countries, compared with USD 109 billion for low-income countries (Fay and Yepes, 2003). Sub-Saharan Africa alone needs USD 17-22 billion a year, more than half of which would be an incremental increase. While middle-income countries have more options and better access to financing, public spending including ODA continues to be the major source of investment in the poorest countries, especially sub-Saharan Africa. Thus there is a great need for donors to reallocate infrastructure aid towards poorer countries, while also developing innovative financing mechanisms in middle-income countries.

Develop innovative financial products. Lending should be combined with financial product innovations (guarantees, risk management products, local currency loans) to increase public and private financing for infrastructure facilities and services targeted at

the poor. Development banks, both bilateral and multilateral, have a comparative advantage in increasing capital market financing for infrastructure in middle-income countries. Such financing is also development oriented and so should be included as a memo item in DAC statistics.

Defining the role of donors: Focus on pockets of poverty using innovative loan-based support

Donor support for infrastructure in middle-income countries should:

- i) Focus on poverty-stricken areas and promote pilot approaches that include such areas in national pro-poor growth efforts.
- ii) Engage the private sector and encourage public-private partnerships.
- iii) Use innovative mechanisms to leverage additional financing – freeing up aid for low-income countries, particularly in Africa.
- iv) Use decent country systems for procurement and social and environmental safeguards.
- v) Focus on the environmental and governance-related strategic development goals identified in the Millennium Declaration, in addition to poverty reduction goals linked to the MDGs.

Supporting regional and cross-border infrastructure*

Develop regional and cross-border infrastructure to support pro-poor growth. Regional and cross-border infrastructure can increase trade, improve security, save money, strengthen natural resource management, address the needs of landlocked countries and build on national and regional comparative advantages, among other benefits. Regional infrastructure projects can be implemented by sovereign governments or regional economic communities. Both approaches require well-designed strategic frameworks and agreements on trade and economic integration. Such projects usually combine infrastructure development with regulatory, institutional and technical harmonisation. Cross-border initiatives are implemented through agreements and contracts between two (or sometimes more) countries and usually have a specific focus, such as integrated water resource management (IWRM) or co-operation on energy supply. Because such arrangements involve several sovereign states, harmonising systems (regulatory, institutional, financial, technical and legal) and ensuring sufficient political support are often major challenges.

Strengthening national and regional policies and capacity

Link regional and cross-border infrastructure with national plans. Regional and cross-border infrastructure projects must be closely linked to national poverty reduction strategies and other development plans, to identify investments with the greatest potential for promoting pro-poor growth and to induce donor investment. National strategies should include careful analysis of trans-national obstacles and integrate the costs of constructing and maintaining regional and cross-border infrastructure in accompanying expenditure plans. Improved coherence and co-ordination between infrastructure improvements at different planning levels (regional, national, local) is vital, both within sectors (for example, linking road corridors with feeder roads) and between them (for example, linking water resource management and food security with rural electrification and health).

* This section draws on, among other sources, Stafford (2005).

Take an economic corridor approach. Many regional and cross-border infrastructure initiatives have indirect – and sometimes uncertain – effects on pro-poor growth. Taking an economic corridor approach helps focus attention on an area broader than the specific line of a road, railway or pipeline. But strategies for developing these economic corridors must address poverty reduction and growth. Complementary measures are needed to ensure that the poor benefit from such investments (or are compensated for any negative effects) and to achieve more direct contributions to pro-poor growth.

Conduct ex ante impact assessments and monitoring. Robust impact assessments and monitoring are needed for regional and cross-border infrastructure, particularly for large projects and investments in fragile areas. Such efforts must consider the potential impacts of infrastructure development and accompanying reforms on the poor and pro-poor growth, taking into account any environmental, social and economic risks in and around the economic corridors or geographic zones. The findings should feed into the design of measures to reduce risks and vulnerability. All affected stakeholders and groups should be consulted during assessment and monitoring.

Support regional economic communities. Regional economic communities are key in facilitating the harmonisation of regulatory, institutional, legal and other issues. Yet despite the importance of such communities in leading multi-state operations, accountability systems are often unclear. So, responsibilities during all programme or project phases, including implementation, must be formally assigned before any involvement by regional economic communities. If necessary, capacity building should be strengthened.

Getting funding frameworks right

Establish mechanisms for coordinating and sharing costs. Strong co-ordination among countries and donors is a prerequisite for any infrastructure project or programme involving multiple states. Clear funding arrangements and equitable cost-sharing agreements between the countries involved are needed to encourage the involvement of countries, donors and investors.

Use regional development banks to channel resources. Regional development banks can play a crucial role in facilitating and financing regional and cross-border initiatives, particularly since they often channel bilateral aid. Bilateral development banks can also support such initiatives.

Defining the role of donors: Support economic activities and trade across borders

To promote regional and cross-border infrastructure, donors should:

- i) Support trade and transport facilitation, such as efforts to reduce border crossing problems – including rationalisation of procedures and elimination of illegal or semi-legal checkpoints on roads – and increase the efficiency of multi-country operations in other network industries, such as railways and electricity.
- ii) Assess potential benefits (for countries, regions and people) and ensure that designs and financing arrangements address concerns about equity.
- iii) Contribute to capacity building and project preparation facilities in regional bodies.
- iv) Ensure that their support promotes regional public goods such as pro-poor growth, poverty reduction and environmental protection.

Chapter 5

Assessing the Effects of Infrastructure on Pro-Poor Growth

The OECD is actively engaged in promoting donor harmonisation. Thus the InfraPoor Task Team recommends that donors promote the development of management information systems, ex ante impact assessments, monitoring systems and the like for each infrastructure sector. Good data and indicators and robust assessment and monitoring are crucial to effective implementation of the guiding principles. Ex ante assessments help design projects that promote pro – poor growth, monitoring is vital to verifying that planned improvements are on course and to correcting design flaws, and evaluation informs future designs and ensures accountability to investors and stakeholders. The current situation is far from perfect: different methods and instruments are used to conduct similar tasks. Donors make multiple demands on partner countries. Finally, there is insufficient capacity to manage data and undertake analysis. This chapter offers guidance on overcoming these weaknesses.

Improving data and indicators

Establish sector datasets. Available data on infrastructure are unreliable, incomplete and out of date. Most partner countries have limited central, local and sector capacity to generate and manage such data. More sector datasets are needed – ideally recognising the links between infrastructure, growth and poverty reduction – to allow international comparisons and support linkages between sector programming, country outcomes and global MDGs. These datasets should be linked to household information on poverty. To make data collection feasible and affordable, cost and capacity considerations must be taken into account. A way to provide support for infrastructure is to include measures and incentives for improving data collection and analysis, including research and academic initiatives in an infrastructure project; doing so would strengthen individual programmes (through baseline data and monitoring) and increase knowledge at the sector, national and local levels. Such efforts can also generate lessons that can, with caution, be applied in countries lacking the capacity to conduct their own research.

Use existing indicators. Optimal use should be made of existing indicators, especially those that monitor poverty reduction and pro-poor growth strategies, as well as general development. Infrastructure-specific initiatives such as the World Bank's proposed collaboration on cross-country infrastructure databases and the European Union's transport indicators are particularly relevant.

Disaggregate indicators and data. Specifying indicators and data based on location, target groups, poverty levels and differential gender impacts is essential to the effective design of infrastructure for pro-poor growth, and to monitoring its impacts on the poor and on poverty reduction. Indicators should allow monitoring of the impact of infrastructure investments on environmental sustainability, social inequalities such as gender and ethnicity that impede growth, and the situation of socially excluded groups. However, sector indicators may not be appropriate to monitor wider impacts on poverty, income distribution and the like, which need to be followed through indicators in national poverty reduction strategies.

Making systematic use of *ex ante* impact assessments¹

Align *ex ante* assessments with poverty reduction strategies and targeting. *Ex ante* impact assessments should be aligned with national poverty reduction strategies and address the issues highlighted in the discussion of this report's guiding principles, including sustainability, governance, cross-sector synergies, the environment for private investment, and potential sources of and bottlenecks to pro-poor growth. To be effective, such assessments should be conducted well before decisions are made and in a transparent, participatory manner – involving stakeholders not only in the analyses, but also in identifying alternative options and mitigating identified problems.

Draw on existing methods and work. Infrastructure investments absorb huge amounts of public and donor funding. Hence their opportunity costs are high. At the same time, pure economic rate of return calculations do not provide sufficient information to

predict their poverty impacts and contributions to the MDGs and pro-poor growth. To increase such knowledge, existing methods and work should be made more operational, such as poverty and social impact assessments (PSIAS) by the World Bank, poverty impact assessments (DAC POVNET), infrastructure indicators developed by various donors and international sector networks, and infrastructure diagnostics used by the World Bank in its Recent Economic Developments in Infrastructure (REDI) studies. More important, further efforts should be made to develop and use simple, robust, affordable methods that take into account analytical capacity in partner countries.

Strengthening monitoring and evaluation

Improve participation and feedback. Participation and feedback mechanisms were almost non-existent in infrastructure project monitoring and evaluation until recently, and should be pursued as much as possible to build knowledge and capacity and influence policy (as in other poverty-relevant sectors such as agriculture, education and rural development). A more dynamic approach to monitoring and evaluation – using innovative, participatory approaches involving stakeholders and beneficiaries (with a broad range of private and civil society actors, including the media) – is required to foster policy making based on communication, learning and feedback. In addition, better indicators and data should be collected to support more efficient sector management.

Conduct sector- and country-wide evaluations. Sector- and country-wide evaluations provide a better means of assessing the poverty impact of infrastructure than do evaluations of individual interventions. To build knowledge, policy and programme interventions can also be clustered by country, region, sector (or multi-sector) or theme.

Defining the role of donors: improve data collection, ex ante poverty impact assessments, and monitoring and evaluation

To better assess how infrastructure investments affect pro-poor growth, donors should:

- i) Strengthen country systems and capacity to generate relevant indicators and data, building on work such as Paris21.² Support should be provided to strengthen the capacity of line ministries, other government agencies and local research institutes to collect and analyse data needed for pro-poor planning of infrastructure delivery.
- ii) Encourage simple, harmonised, *ex ante* poverty impact assessments of infrastructure, aligned with poverty reduction strategies and the capacity of partner countries.
- iii) Engage in joint monitoring and evaluation – involving donors, governments and other stakeholders – to build and share knowledge. Monitoring and evaluation should also aim to strengthen local research and analytical capacity, by involving government agencies, national and regional research institutions, civil society organisations and local consultants.

Notes

1. This section draws on, among other sources, Jennings (2005). The DAC POVNET working group is conducting further work on a harmonised donor approach to *ex ante* poverty impact assessments.
2. The Partnership in Statistics for Development in the 21st Century (PARIS21, at www.paris21.org) is a consortium of policy makers, analysts and statisticians from around the world, formed to promote high-quality data, make these data meaningful, develop sound policies and facilitate dialogue on development data.

Chapter 6

Monitoring Implementation of the Guiding Principles

This section outlines the steps that donors should take to monitor implementation of this report's guiding principles, and the indicators they should use.

Monitor and evaluate implementation of the principles. Implementation of the guiding principles must be monitored to ensure intended outcomes and generate lessons. Donors have proposed using the DAC framework to conduct such monitoring, with peer reviews for specific issues, regions and countries. In addition, implementation of the principles should be evaluated in collaboration with partner countries, facilitating co-ordinated follow-up at the country level.

Develop indicators to gauge implementation of the principles. To support peer reviews, the InfraPoor Task Team has suggested indicators to assess implementation of the guiding principles by all donors that are members of the team (Table 6.1). Donors may wish to refine and deepen these indicators based on their institutional contexts and priorities. In addition, over time more measurable indicators will be developed and agreed.

Table 6.1. **Suggested indicators for monitoring implementation of the guiding principles**

Principle	Indicators
Use partner country – led frameworks as the basis for co-ordinated donor support	Percentage of on-budget donor infrastructure support. Percentage of donor funds in country sector programmes. Existence of medium-term joint assistance strategy developed by donors and the partner country, involving all donors and linked to the national poverty reduction strategy.
Enhance infrastructure's impact on poor people	Number of an <i>ex ante</i> impact assessments conducted by donors (country and sector studies as well as general surveys on poverty reduction strategies and the MDGs). Extent of capacity building for cross-sector planning and impact assessment.
Improve management of infrastructure investment, to achieve sustainable outcomes	Percentage of donor programme portfolio funding maintenance and capacity building. Number of donor investments taking into account recurrent maintenance and maintenance capacity. Alignment of donors with partner countries' sector plans, budgets and systems.
Increase infrastructure financing and use all financial resources efficiently	Percentage of non-official development assistance in infrastructure financing. Percentage of economic infrastructure in donor portfolios.

ANNEX A

The InfraPoor Task Team

Objectives

The DAC Task Team on Infrastructure for Poverty Reduction (InfraPoor) was established in November 2003 as part of efforts by the DAC Network on Poverty Reduction (POVNET) to identify how donors can be more effective in promoting growth that involves and benefits the poor, to contribute to the MDGs. POVNET started its work by focusing on three areas: agriculture, private sector development and infrastructure. For each area a task team was established.

The goal of the InfraPoor Task Team was to formulate – in the context of efforts to achieve the MDGs – a joint position of DAC members to enhance the impact of economic infrastructure on poverty reduction and economic growth. Such infrastructure was defined as transport, energy, information and communication technology, and irrigation, drinking water and sanitation.

Participants

The InfraPoor Task Team was led by a core group of donors: the European Commission, France (French Development Agency), Germany (German Agency for Technical Co-operation and KfW Development Bank), Ireland (Development Co-operation Ireland), Japan (Japan Bank for International Cooperation, chair), Switzerland (State Secretariat for Economic Affairs), the United Kingdom (Department for International Development) and the United States (US Agency for International Development).

Other DAC members involved in the InfraPoor Task Team's work included Australia, Austria, Belgium, Canada, Denmark, Finland, the Netherlands, Norway and Sweden.

Multilateral development agencies were also involved: World Bank, Asian Development Bank, African Development Bank and International Labour Organization.

Government, private sector and civil society representatives from partner countries also participated, feeding in their experiences and providing examples of good practice. Countries represented include Albania, Armenia, Bangladesh, Bolivia, Cambodia, Ghana, India, Indonesia, Morocco, Nicaragua, Pakistan, Peru, Tanzania, Uganda and Viet Nam.

Particular thanks go to the following core group members; Hitoshi Shoji (task team leader), Yasuhisa Ojima (JBIC, Japan), Armin Bauer and Nina Barmeier (KfW Development Bank and GTZ, Germany), Jean-Francis Benhamou (AFD, France), Alistair Wray and Leonard Tedd (DFID, United Kingdom), Olivier Bovet (Seco, Switzerland), Bryan Greey and Bruce Thompson (European Commission), Earnan O'Cleirigh and Gerry Cunningham (DCI, Ireland),

Mark Karns (USAID, USA) and Antonio Estache (World Bank). Technical support to the Task Team was provided by OECD staff, Bill Nicol and Annabel Mülder. Initial draft of this document was prepared by Mary Braithwaite. The final version was edited by Paul Holtz.

How the work was carried out

The InfraPoor Task Team's work involved intensive examination of the evidence and experiences accumulated by donors and partners over many years, across the four economic infrastructure sectors and all developing regions. The process included:

- i) Two surveys of donors to identify issues, approaches, lessons and examples of good practices.
- ii) Production of many expert working papers (References) covering the infrastructure sectors addressed and various cross-cutting themes, including financing, the MDGs, poverty reduction strategies (PRSs), gender equality, the impact on the disabled and on socially excluded groups, regional and cross-border infrastructure, impact assessment and targeting.
- iii) Three important meetings (29-30 March 2004 in Paris, 27-29 October 2004 in Berlin and 22-24 March 2005 in Tokyo).
- iv) Review of drafts of the guiding principles for infrastructure by the Task Team and sector networks.
- v) Financial and logistical support from the core group of donors, who have met regularly to steer the process.

More information on the InfraPoor team's process and copies of all working papers are available at: www.oecd.org/dac/poverty.

ANNEX B

Potential Contributions of Infrastructure to the Millennium Development Goals

	MDG 1: Reduce income poverty and hunger	MDG 2: Full primary education coverage	MDG 3: Gender equality in education
Transport – Local (Village to Township or Main Road)	+++ Improvements to low-volume local roads and associated networks of village tracks/paths can significantly reduce poor farmers' transaction costs and expand their production possibilities (incl. non-farm)	++ Village roads significantly affect school enrolment and attendance	++ Girls' attendance significantly increased by safer roads
Transport – Trunk (Beyond the Township)	+++ Availability of competitive transport services on adequately maintained trunk network is critical to the effective participation of an area in national and international markets	+ Quality of link to regional centre significantly affects quality of teacher who can be attracted and his/her attendance	+ Helps secure better quality of teacher
Modern energy	+++ Rural electrification often correlates with sharp increase in regional incomes and growth of non-farm activity. Reliability of modern energy supply strongly affects investment in, and competitiveness of, local enterprises	+ Availability of modern energy increases enrolment and attendance rates, and home electrification raises time devoted to study	++ Modern energy helps families release girls for school: less time collecting fuel-wood and water, and schools improved
Telecom	++ ICT significantly improves the efficiency of most service-sector activities (incl. government) and can in particular reach poorer people with information of direct use for improving their economic situation	+ ICT helps expand and improve teacher training, and can make classes more interesting	+ ICT can make school more worthwhile attending by strengthening students' exam performance
Household water	++ Convenient, good water can substantially reduce morbidity and mortality, time spent fetching water, and enterprise interruptions, and improve nutrition, with significant effects on poor people's productivity	++ Good home water supply increases school attendance (especially by children with literate mothers) and increases learning capacity	+ More convenient home water supply facilitates release of girls for school and reduces absences due to sickness
Sanitation	+ Adequate sanitation sharply reduces illness and expenditure on medical treatment (itself a significant factor in poverty)	+ Good sanitation/water helps attract good teacher	++ Good school sanitation and water facilities increase girls' attendance
Water management structures	+++ Irrigation and flood control structures can greatly increase incomes and nutrition levels of the poor if they are managed to maximise benefits to the community as a whole, and especially if they support production of labour-intensive crops		+ Less drudgery for women in obtaining water for household needs
Public markets	+ Reduce transaction costs for small producers and help ensure competitive prices for consumers	+ Make centre at which schools, etc. benefit from same good access	

MDG 4: Reduce < 5 mortality	MDG 5: Maternal mortality reduction	MDG 6: Communicable disease	MDG 7: Environmental protection	MDG 8: Framework for development.
+	+		+	+
Increases use of primary healthcare facilities and facilitates access to better water	Positively affects antenatal care and share of deliveries professionally attended		Care needed to maximise compatibility of engineering design with local environment	Work on local roads/transport can generate much youth employment
++	+	+	-	+++
Vaccines/drugs supply, visits by more skilled health personnel and emergency evacuations	Increases in-hospital deliveries and often critical when emergency obstetrics required	Important for drug supply and higher-level diagnostics. Care needed to avoid stimulating AIDS spread	Great care needed in fragile ecological environments to minimise risks and compensate people who suffer	Essential facility to enable area to benefit from international trade opportunities
++	+	+	++	+
Sharply reduces indoor smoke pollution and impurities in water/food consumed, the two major mortality factors	Reduced stress of household chores, and electricity improves medical services (hours, equipment, refrigeration)	Improved medical services, including from attraction of more qualified personnel	Reduces pressure on land resources (by moving water and reducing fuel-wood need), but care needed to avoid ill-effects of large dams	Small quantities of electricity essential for use of modern ICT
+	+	+	+	++
Can promote better health practices and ensure timely availability of life-critical diagnostic info. and drugs	ICT enables efficient arrangements for emergency treatment	Reduce drug stock-outs and make efficient referrals to higher medical institutions	Record-keeping and retrieval services of importance for environmental protection	Essential to target for ICTs' supply, and for participation in international economic opportunities
+++	+	+	+++	+
Good home water supply greatly reduces child mortality, especially if mother is literate	Water improves general maternal health and deliveries	Clean water important for disease treatment, and for formula milk (HIV mothers)	Crucial for meeting the household water target under this goal	Water improvement much needed in least developed countries
+	+	+	++	+
Improved sanitation decreases child mortality and improves nutrition	Improved sanitation reduces maternal illness	Effective water disposal reduces malaria mosquito breeding	Crucial for meeting the sanitation target and combating urban environmental degradation	Sanitation high priority in least developed countries
+		-	++	
More ample supplies of water for household use		Care needed to avoid adverse health consequences of man-made changes in water regimes	Sound planning, design and op. of water-related structures are key in protecting environmental resources and accommodating growing populations	
+				+
Help ensure clean food supplies				Makes centre for ICT-based Activities

Note: +, ++ and +++ indicate percentage improvements relative to initial levels of attainment. While the overall experience suggests that some types of infrastructure might have been more efficient in achieving specific MDGs, in specific projects that is not always the case. Hence the need for *ex ante* impact assessments at the project level derived from general sector-level analysis.

Source: Willoughby (2004b).

ANNEX C

Projects and Good Practices Related to the Four Guiding Principles

Around the world, there are many examples of infrastructure projects that reflect the four guiding principles in their design, implementation, assessment and other areas. These projects include:

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

- i) Adapting growth and infrastructure strategies to reduce poverty in Viet Nam.
- ii) Targeting technical support to improve power sector management and reallocate resources in India.
- iii) Promoting pro-poor growth in China.

Principle 2: Enhance infrastructure's impact on poor people

- i) Recognising – and exploiting – the links between rural roads and poverty reduction in Africa.
- ii) Using information and communication technology to expand opportunities for women in Bangladesh.
- iii) Conducting an *ex ante* impact assessment of energy privatisation in Honduras.
- iv) Expanding urban water supply in Bolivia.
- v) Pursuing community-led total sanitation in Bangladesh.
- vi) Rehabilitating water infrastructure and reforming land tenure in Cambodia.
- vii) Using smart subsidies under public-private partnerships to expand power access in Tajikistan.

Principle 3: Improve management of infrastructure investment, to achieve sustainable outcomes

- i) Ensuring effective road maintenance in Cameroon.
- ii) Promoting effective regulation to develop urban water kiosks in Zambia.
- iii) Forming a public-private partnership to support investment in El Salvador.
- iv) Organising a co-operative network for rural electrification in Bangladesh.
- v) Cleaning river basins, treating waste water and improving drinking water in Morocco.

Principle 4: Increase infrastructure financing and use all financial resources efficiently

- i) Providing a guarantee for increased telecommunications investments in Uganda.

- ii) The Emerging Africa Infrastructure Fund – drawing on a range of financing sources to develop private infrastructure.

These projects are summarised in the sections that follow.

Principle 1: Use partner country-led frameworks as the basis for co-ordinated donor support

Adapting growth and infrastructure strategies to reduce poverty in Viet Nam

After adopting its Comprehensive Poverty Reduction and Growth Strategy in May 2002, the Government of Viet Nam recognised that the strategy was not aligned with its Public Investment Plan. The initial version of the strategy failed to address the role of large-scale infrastructure, while the public investment programme (PIP) focused on such investment.

Several donors – the Australian Agency for International Development (AusAID), U.K. Department for International Development (DFID), Japan Bank for International Cooperation (JBIC), Asian Development Bank (ADB) and World Bank, led by Japan – helped a Vietnamese inter-ministerial working group analyse how large-scale infrastructure can contribute to sustainable growth and poverty reduction. The group sponsored a workshop to discuss the findings, which were later incorporated in the Comprehensive Poverty Reduction and Growth Strategy.

This collaboration also led to an agreement to focus the country's next PIP on making public investments more efficient, balancing economic and social investments between rich and poor areas, integrating capital and recurrent expenditures to ensure adequate maintenance of public infrastructure and optimal development impact of all public spending, recognising that operation and maintenance investments often yield higher returns than do new projects, improving poor people's access to infrastructure and observing environmental and social safeguards. These policy issues will also be addressed through reforms supported by the Poverty Reduction Support Credit, provided as co-financing between the World Bank and JBIC.

Targeting technical support to improve power sector management and reallocate resources in India

State-owned electricity utilities in India suffer heavy financial losses due to high levels of inefficiency, system losses, power theft and subsidies. State financing for subsidies is often provided through book transfers rather than actual cash transfers – and is frequently delayed, exacerbating the financial problems of utilities. Moreover, Indian power supply is highly politicised, particularly in rural areas, where the political strength of farmers has created a culture of free or heavily subsidised electricity for irrigation pumps. Most rural energy subsidies are badly targeted, captured by elites and do not encourage efficiency, leading to water resource depletion and oversized pumping sets.

To stem such losses, DFID has been working with various state governments to restructure and reform power utilities and increase efficiency. For example, DFID supported an intensive five-year, GBP 30 million (United Kingdom pounds) programme of technical assistance for power reform in Andhra Pradesh, complementing large-scale investment resources from the World Bank. Between 1999 and 2004 the programme helped reduce annual electricity subsidies by about GBP 200 million. In the neighbouring state of Madhya Pradesh a two-year, GBP 10 million programme helped slash losses by about GBP 220 million.

Lower subsidies helped Andhra Pradesh reallocate resources to spending on poverty reduction. The programme also provided higher-quality power services to support economic growth. In addition, government reforms have increased utility efficiency and service reliability, improved metering, billing and revenue collections, and better addressed the socio-economic issues involved in power provision.

Promoting pro-poor growth in China

China's impressive economic development – with *per capita* income quadrupling and poverty falling significantly since the 1980s – is the result of many factors, including promotion of private initiative, investment in infrastructure and opening to the outside world. Development has had the biggest impact on the country's coastal provinces. To reduce poverty in the hinterlands, China has embarked on a “go west” strategy, part of which involves construction of a 625 kilometre railway from Chongqing to Huaihua, thereby increasing access to the Red Basin and its 120 million inhabitants.

Supported by German Financial Cooperation, the new railway is a good example of a transport project that aims to reduce poverty by increasing transport efficiency and economic growth. The railway reduces the average distance travelled along the corridor by 275 kilometres, to 370 kilometres, saving money and time. The resulting growth effects – through increased trade, productivity and division of labour – will benefit the poor. Apart from impacts on the national economy, regional poverty impacts can be expected from the transport opportunities created in very poor areas. Residents of these areas should benefit from increased trade, market integration, urbanisation, mining, agricultural production and processing, tourism and new businesses.

The project design is pro-poor in several respects. Attention was paid to connecting a large number of poor townships and small cities to the railway, creating opportunities for manufacturing and services as an alternative to farming in mountainous areas. Moreover, infrastructure developed during railway construction (roads, bridges, buildings, drinking water stations, electricity lines) was designed for permanent use. Employment was generated for the local poor through labour contracts and procurement of local construction material. And by cutting transport distances and diverting road traffic to the more environment-friendly railway, the project has saved energy and reduced pollution.

Principle 2: Enhance infrastructure's impact on poor people

Recognising – and exploiting – the links between rural roads and poverty reduction in Africa

In a 1998 study of its aid for road projects in Ethiopia, Lesotho, Tanzania and Uganda, Development Cooperation Ireland found strong linkages between rural roads and poverty reduction:

- i) Identifying and targeting poor populations are crucial to reducing poverty. Road projects can use various types of targeting, including based on geography or sector, wages, season or gender. With international geographic targeting, support is based on country classifications such as least developed, rankings such as the United Nations Development Programme's human development index or progress towards the MDGs. Within countries, remote districts and poor urban areas can be targeted in line with the scope of proposed interventions. At the village level, formal transport networks are used infrequently – mostly for peak seasonal market access or emergencies. Indeed,

70% of transport activities are conducted at the household level (using paths and tracks), involving collection of firewood and water and travel to the farm. Wage targeting can be used by setting daily payments at a rate that mainly attracts the most needy community members, not the better off. Where communities are predominantly poor, workers can be rotated on 3-6 month contracts to ensure that everyone has an opportunity to work. With seasonal targeting, it is important to consider how the timing of projects will affect the availability of labour at peak agricultural times, to ensure household security. Finally, gender targeting is essential for projects designed to support poverty reduction. Quotas for women are especially effective – including female-headed households, with an emphasis on serving their domestic needs (child care, water provision). In Development Cooperation Ireland programmes, women's participation in the workforce ranges from 15-50% depending on time of year, migrant male employment elsewhere (such as in mining), social customs, proximity of works and commitment by the implementing agents.

- ii) Roads do not guarantee increased prosperity. They have the most impact in areas with potential (such as in agriculture) for a significant economic response and where improved access is being provided for the first time. In all cases, communities should participate in decision making.
- iii) For low-volume rural roads, “basic access” standards are likely to be just as cost-effective and often more sustainable than higher design standards. Spot improvement approaches are often the best way to extend services to the maximum number of beneficiaries.
- iv) In areas with weak economic activity, the main benefit for the poor is the short-term cash injection provided by employment. Without wage employment, such as labour-based road projects, poor communities will not have sufficient economic capital to exploit the business opportunities created by improved access. Expectations of reduced transport costs or increased market prices are often not realised in the short to medium term because they usually depend on external market forces.
- v) Wages paid to women are more likely to be channelled to social and productive priorities.
- vi) In Uganda better infrastructure increases use of emergency health care but not necessarily routine care. In Ethiopia and Lesotho the construction of footbridges (for both people and livestock) was particularly cost-effective in increasing year-round access for local communities, especially for schooling and emergency medical treatment.
- vii) In most cases improved infrastructure has made government employees more willing to work in remote districts.

The Kibaale District programme in Uganda represents a best-case scenario in terms of social and economic impact. Even with basic access standards, car taxis have replaced traditional pick-up and four-wheel-drive versions, resulting in increased service at lower cost. Improved road surfaces and wages from the works have significantly increased the use of bicycles, mainly among men, though there is evidence that men are using the bicycles for tasks such as water collection, previously a female burden. Parents used wages to pay schooling costs, and attendance rose 119% between 1991 and 1996. There is significant evidence of higher housing standards and a proliferation of small business activities, increasing local council revenue.

Using information and communication technology to expand opportunities for women in Bangladesh

GrameenPhone's Village Phone Programme is administered by one of its shareholders: the non-profit Grameen Telecom, created by the Grameen Bank. The model is simple. A person, usually a woman, buys a telephone handset and a subscription from Grameen Telecom with a loan secured from the Grameen Bank's micro-credit facility. By selling phone services to her fellow villagers, she gradually pays off the loan while making a living. To cover the programme's administrative costs and provide an income to subscribers, Grameen Telecom buys airtime in bulk at a discounted rate from GrameenPhone.

Studies conducted during the programme's early years found widespread demand for telephone services in rural villages. Phones are used for a variety of purposes: keeping in touch with family members who have gone abroad to work, organising remittance transfers, inquiring about market prices in neighbouring towns, consulting doctors and so on. Rapid expansion in the number of village operators shows that the programme is profitable for operators and provides socio-economic benefits for communities.

One of the explanations for the programme's success is the 1 800 kilometre fibre optic backbone network infrastructure, spread across the country along Bangladesh Railway's lines, which Norway financed in the 1980s. This huge initial investment was a sunk cost for the programme. In addition to financing infrastructure expansion, donors such as Canadian International Development Agency (CIDA) and Norwegian Agency for Development (NORAD) have financed socio-economic studies for the programme.

The programme makes effective use of a multi-stakeholder approach to create business models for expanding infrastructure to unprofitable areas, including the following measures:

- i) *Provision of micro-credit* to give purchasing power to the poor.
- ii) *Reliance on a special purpose organisation*. Grameen Telecom is responsible for programme management, training of operators and all service-related issues, drawing on substantial support provided by the Grameen Bank's national community network and the bank's family of organisations.
- iii) *Use of a tariff discount system beneficial to all actors*. For GrameenPhone, the programme's benefits include guaranteed revenue without any bill collection cost and the lack of need for investment in a sales and billing network in rural areas. For Grameen Telecom, its administrative cost for the programme is covered without any subsidy. For village phone operators, the system provides a business opportunity. For users, there is no need to travel to cities for telephone services, and they pay the market rate (rather than an add-on premium rate) for services.
- iv) *Consistent programme management policies*. The programme has strict rules, including criteria for selecting operators and no misuse of programme benefits. In addition, it takes a sequential approach: every operator is initially granted a monopoly on village services, and competition is introduced slowly and carefully.
- v) *Extensive coverage*. GrameenPhone is able to reach villages because of its fibre optic network and growth in the number of its base stations.

Conducting an ex ante impact assessment of energy privatisation in Honduras

Poverty and social impact assessment (PSIA) is an approach to impact analysis that informs policy formulation and choice, rather than being a specific tool or method. It draws

on a host of tools from many disciplines, depending on what is appropriate. PSIA considers the intended and unintended consequences of policy interventions on the well-being of different social groups – with a focus on poor and vulnerable people, and including both the income and non-income dimensions of poverty.

In 2002 a PSIA study was conducted of possible electricity privatisation in Honduras. Carried out by the UK Department for International Development (DFID) in co-operation with the government's Poverty Reduction Strategy Unit, the study aimed to examine the impact on poverty of different privatisation scenarios and outcomes. The study showed that the effect of the increases in electricity price would have the greatest negative effect on very poor rural households. The findings were shared with the donor community and civil society.

PSIA is innovative in that it calls for *ex ante* (as well as *ex post*) assessment of a policy change's impact on poverty. Ideally the process should have a central role in the policy process, take a disaggregated view of poverty, facilitate broad stakeholder engagement, be multi-disciplinary and part of national processes, and support capacity development – while always remembering the need to be pragmatic and appropriate to its purpose. Since the pilot studies in 2002, DFID has identified 134 PSIA's completed or under way by various donors, 38 of which have involved infrastructure. (For more information on PSIA pilot studies, visit: www.prspssynthesis.org/psia.html.)

The Honduras PSIA consulted government, civil society and the international community. The study adopted a methodology combining qualitative work and quantitative assessment, drawing on various sources of information – including data from the national electricity supply company, national household surveys and case studies of utility privatisation. The study concluded that any privatisation of electricity should proceed with caution. If efficiency gains do not counterbalance the need to raise prices to cover costs, the net impact on poverty could be dramatic, especially in very poor rural households.

PSIA uses a wide range of tools and methods, including econometric, risk and vulnerability assessment, social impact assessment, monitoring, participatory approaches and political economy. These tools help identify direct impacts in the short term and indirect impacts over the long term. The framework and tools used in PSIA are summarised in the PSIA User's Guide (<http://lnweb18.worldbank.org/ESSD/sdvext.nsf/81ByDocName/PSIAintheWorldBank>) and the Sourcebook of Tools for Institutional, Political and Social Analysis (soon to be posted on the World Bank and DFID Web sites). Because of its history, PSIA emphasises policies. But this framework and its many tools are also applicable for sector plans, programmes and large projects. Given that PSIA can cover the range from simple and quick reports to complex and long-term studies, it provides an ideal framework for improving understanding and assessing the *ex ante* impact of initiatives to address poverty.

Expanding urban water supply in Bolivia

In the city of El Alto, Bolivia, the densely populated and particularly poor District 7 lacks a public water supply and sanitation system. In 1997 a concession agreement (public-private partnership) was concluded between the municipality of El Alto and the private utility Aguas del Illimani (AdI). The agreement foresees expansion of the city's water and sanitation network to poorer areas of the city, but makes no provision for

District 7 and its surrounding peri-urban districts. Due to the population's limited purchasing power, connecting the area to the network is not profitable for AdI.

Expanding the network to District 7 requires state subsidies. Switzerland's State Secretariat for Economic Affairs (Seco) contributed by financing the main pipelines and sewage treatment tanks and pre-financing connection charges with a non-reimbursable grant. The district's population can reduce individual connection charges by contributing their labour. The reduced charges are paid into a revolving fund that is used to finance further connections in the surrounding districts. While the initial funding from Seco enabled the construction of about 3 000 drinking water and 5 000 sewer connections, the revolving fund will ultimately lead to 12 000-14 500 new connections. The use of simple, appropriate, low-cost technology further lowers costs. In addition, the project is to be complemented by technical assistance on health and sanitation as well as training to develop local plumbing services. Ultimately about 60 000 people are expected to benefit directly from the project.

Major innovations under the project include:

- i) The one-time subsidy through pre-financing of connection charges.
- ii) In-kind contributions of the poor's labour, lowering connection charges.
- iii) The multiplier effect resulting from the creation of a revolving fund, financed by connection charges, for further connections.
- iv) Affordability through a "condominium" approach using simple, low-cost technology.
- v) Sustainability through operation and maintenance by the private operator (part of the concession agreement) and technical assistance for users.
- vi) Creation of opportunities for private business – and so income generation – through provision of training in plumbing construction and maintenance.

Pursuing community-led total sanitation in Bangladesh

Political commitment to sanitation has grown since the addition of an MDG target on sanitation at the 2002 World Summit on Sustainable Development in Johannesburg, South Africa. While urban sanitation and waste water treatment remain major challenges, new approaches to rural sanitation emerging from Bangladesh are being adopted by other countries with sanitation crises.

In recent years one of the most exciting developments in sanitation provision has been the emergence of the community-led total sanitation approach in Bangladesh – pioneered by various local non-governmental organisations (NGOs), guided by the international NGO WaterAid and supported by the UK Department for International Development (DFID). This model challenges established approaches to sanitation by promoting changes in hygiene behaviour at the community rather than the household level, achieving total sanitation (with an end to open defecation) and underscoring that direct subsidies are neither needed nor desirable. Progress in Bangladesh has been dramatic. The government has set a target of total sanitation by 2010, well in advance of the MDG target.

The community-led total sanitation approach involves numerous innovative mechanisms. In many traditional rural sanitation programmes, subsidies are provided for hardware and progress is measured by the number of new latrines. The community-led approach advocates that subsidies for hardware costs be provided by communities, made

possible by the low costs involved. Programme implementation relies on participatory rural appraisal principles of community mobilisation and empowerment. However, recent research has found that the approach may have problems with sustainability and targeting of poor people.

India recently adopted aspects of the community-led total sanitation approach. Encouraged by promising pilot work in the state of Maharashtra, in June 2003 the Indian government announced the Nirmal Gram Puraskar scheme, which provides fiscal rewards for villages that become free of open defecation (in other words, a reward for sanitation outcomes) rather than subsidies for the construction of toilets (inputs). Furthermore, in November 2003 the Indian government announced its goal of moving towards a no-subsidy regime in sanitation.

Rehabilitating water infrastructure and reforming land tenure in Cambodia

The Prey Nup Project, supported by the French Development Agency (AFD), aims to reduce poverty through water infrastructure improvements and land tenure reform. When the project started in 1999, its contractual documents set five complementary objectives:

- i) Rehabilitating hydraulic infrastructure to protect 11 000 hectares of rice-growing land.
- ii) Transferring polder management to a polder users community to make infrastructure management more efficient and sustainable and lower recurrent costs.
- iii) Establishing a polder land map to calculate user fees, and preparing for the regularisation of polder land ownership rights.
- iv) Establishing agricultural production support mechanisms.
- v) Establishing a sustainable rural credit service.

The project moved from experimental to pilot status after management of the hydro-agricultural scheme was transferred to users and the land registration method was established. Both of these local activities took on larger resonance because they were used as input for national policies being elaborated. These were not explicit goals when the project was launched.

The project has resulted in physical upgrading of infrastructure, including dikes, hydraulic works, and canals. In addition, topographical markers have been installed, and a detailed topographic survey of the six polders is available. The project's micro-credit component has been implemented, with a sustainable micro-credit institution (EMT) established in the region that offers solidarity and personal loans to village households. By late 2000 about 6 000 households has taken solidarity loans, and the outstanding balance totalled 1.35 billion riels.

The project's land tenure regularisation component is under way; nearly all cultivatable areas have been publicly registered, and 95% of the plots have been titled and received property deeds. The agricultural development component has replanted 1 500 hectares (about half of the total), resulting in higher average rice yields. In addition, cultivable areas have been extended and crops diversified, and actions have been taken to improve animals' health. Finally, management has been transferred to a representative Prey Nup polder users community with nearly 15 000 members. The community has been legally recognised by the supervising Ministry of Water Resources and Meteorology, and has specific tools and procedures for water management. A participatory maintenance plan has been prepared and discussed.

Using smart subsidies under public-private partnerships to expand power access in Tajikistan

Tajikistan's Pamir Private Power Project was developed by the International Finance Corporation (IFC), International Development Association (IDA) and Aga Khan Fund for Economic Development (AKFED), with financial support from Switzerland's State Secretariat for Economic Affairs (Seco). The project aims to complete and rehabilitate the Pamir I hydropower plant, the power transmission system and management of the power utility in the Gorno-Badakhshan oblast. Activities under the project are covered by a 25-year public-private concession agreement between the government and Pamir Energy. This company is owned by AKFED (70%) and IFC (30%), which will finance the largest portion of the project (USD 16.4 million). Additional financing will be provided through a USD 10 million IDA loan to the government.

Due to widespread poverty in the area, for the first 10 years of the project, consumers will receive subsidies for a baseline of services – that is, a lifeline tariff block – allowing lower levels and slower increases in tariffs. (Increases are needed for long-term cost recovery.) The subsidies will be financed by a USD 5 million grant from Seco and a spread resulting from on-lending of the IDA loan to Pamir Energy at a higher interest rate. These subsidies are considered “smart” because they are targeted, do not disrupt market forces and have a limited lifespan. In addition, steps have been taken to achieve longer-term affordability.

The concession agreement became effective in December 2002 and has operated successfully since then. The public-private partnership has ensured effective and efficient electricity provision, while the smart subsidies have ensured that basic services are affordable. In addition, the project's gradual tariff increases will support long-term cost recovery and enhance the project's sustainability.

Principle 3: Improve management of infrastructure investment, to achieve sustainable outcomes

Ensuring effective road maintenance in Cameroon

Implementation of the second Cameroon Road Maintenance Programme, jointly financed by the European Commission (EUR 54 million) and the Cameroon Road Fund (EUR 24 million), started in 2000 with the goal of supporting the government's sector reforms – particularly efforts to establish a sustainable, effective maintenance system for the priority road network. The four-year programme provided annual funding for routine maintenance on about 5 000 kilometres and periodic maintenance on 1 500 kilometres. It also helped build the capacity of the key players in the maintenance system, notably the Ministry of Public Works for programming and organisation, local consulting companies for designing and supervising works, small and medium-sized local contracting enterprises for executing works and road users for enhanced participation in road management. The programme was managed with the assistance of consultants.

A mid-term review in 2003 highlighted the sound management of the road fund (particularly its efficiency in paying contractors) but noted that its financing was still dependent on an annual budget allocation from the Ministry of Finance – an approach that did not ensure sustainability – and that the funding provided was below needs. Training was assessed as having clear positive impacts but needed to be sustained over a long period, and support given to establishing professional associations for local contractors and consultants, as well as internal structures for training within these associations and within government.

Promoting effective regulation to develop urban water kiosks in Zambia

In Zambia the German Agency for Technical Cooperation (GTZ) and KfW Development Bank have been helping reform the water sector and invest in local distribution points – so-called water kiosks – since 1994. This support is designed to increase water supplies for the rural poor and residents of urban slums. The reform is being promoted as part of the EU Water Initiative and by the World Bank and other partners and donors, and focuses on regulating, decentralising and professionalising supply services. Increased financial sustainability in the water sector, coupled with more balanced rates and conditions, will help the poor gain access to water at stable, affordable rates.

Ten new utility companies have taken over and in some cases restored ramshackle facilities. Decisions in the water sector are no longer dominated by large users. Instead, a new, independent regulatory authority has given poor people a voice and strong lobby. Water watch groups arbitrate disputes between consumers and utilities. And the dedicated Devolution Trust Fund (DTF) provides investments that give poor users low-cost access to water. As a result of the 80 urban water kiosks set up in two provinces with support from GTZ and KfW Development Bank, more than 100 000 slum residents now have reliable access to water.

Commercialising the water supply does not, however, automatically benefit the poor. The pro-poor aspect must be given high priority even at the planning and implementation stages of reform. This requires strong political backing to ensure that reform remains on track. In an urban context special attention must be paid to the peripheries and slums where the poor live. Strong, autonomous regulation and specific pro-poor instruments such as the DTF are required to narrow service gaps, including a dedicated information system tailored to the water challenge that is user friendly and easy to maintain over the long term.

Forming a public-private partnership to support investment in El Salvador

The Government of El Salvador has chosen the gulf of Fonseca in La Union Province – a traditionally poor area where poverty grew even worse during the civil war of the 1980s – to develop international port facilities and complement the fully used Port of Acajutla. The project includes constructing access roads and general and bulk cargo, container and passenger quays, procuring cranes and tug boats, and dredging for the port access channel. The proposed port will also support the Puebla Panama Plan – which promotes regional integration in Central America – by connecting to the ports of Cortez (Honduras) and Barrios (Guatemala) for cargo trans-shipments between the Gulf of Mexico and the Pacific Ocean, given the high traffic load in the Panama Canal.

Drawing on a feasibility study by the Japan International Cooperation Agency (JICA), the project is designed as a public-private partnership. Components considered to have a public good nature (quay walls and cranes, the terminal area, maintenance of the navigation channel and basin and pilot service, and basic utilities needed to run port activities) will be provided by the public sector, while the private terminal operator must provide all other equipment. The private operator will be responsible for daily and minor maintenance of the terminal facilities, while the implementing agency (Comision Ejecutiva Portuaria Autonoma, or CEPA) will be responsible for major repairs (except damage caused by the operator or other users).

During the project appraisal, CEPA and JBIC agreed to introduce terminal leasing (concession) contracts. It was also discovered that CEPA did not have any experience with

concession contract and container terminal operation, so JBIC agreed to help select and negotiate a contract with the future port operator by building CEPA's capacity. That support will include study and advisory works to identify issues involved with port operations in Latin America, identify issues for ports operated under concessions and for prospective operators, and provide CEPA with recommendations on the contracting process, the draft contract document and the final contract document.

Organising a co-operative network for rural electrification in Bangladesh

Bangladesh's Rural Electrification Programme supports the strategy established by the Rural Electrification Board, which is to provide electricity through a network of member-owned co-operatives known as *palli bidyut samities* (PBSs). The US Agency for International Development (USAID) provided technical assistance on organising beneficiaries in co-operatives and managing them, based on US experience with rural electrification. Other donors (15 in all) – including UK Department for International Development (DFID), the Japan Bank for International Cooperation (JBIC), Canadian International Development Agency (CIDA), International Development Association (IDA) and Asian Development Bank (ADB) – financed the investment component. The first PBS was organised north of Dhaka in 1978, and energised in June 1980.

The programme makes effective use of a participatory approach to organising and managing the electrification co-operatives, including:

- i) Extensive training. The Rural Electrification Board provided extensive training for its staff and those of PBSs on managerial and technical issues, and for residents on basic electricity knowledge.
- ii) Performance contests. Performance target agreements are used to assess individual PBSs. These assessments provide bonuses as well as penalties, and are designed to promote competition among the PBSs and improve their performance.
- iii) Internal checks. The Rural Electrification Board and PBSs are carefully organised to avoid centralised authority and prevent unfair practices. The performance of general managers is checked by the board of directors, consisting of member representatives, and the institutional structure is designed to check and balance internal works.
- iv) Extensive member support. PBS offices offer fast and free technical repair service so that members do not have to bribe anyone for such support.
- v) Well-designed tariff collection procedures. To prevent dishonesty, different officers are responsible for meter reading, tariff calculation, bill delivery and book-keeping. In addition, officers check meters when delivering bills. Tariffs are collected through bank transactions. Meter readers are employed under annual contracts and rotated among service areas every four months.
- vi) Village and female advisers. Each PBS appoints one village adviser and two or three female advisers to provide information on operations, PBS policies and basic education on electrification.
- vii) Group responsibility. PBS members are all split into smaller units, and each group is collectively responsible for honouring the duties of its members.

Cleaning river basins, treating waste water and improving drinking water in Morocco

River pollution imposes high economic costs in Morocco, estimated at 1.2% of GDP over the long term (by 2020). Such pollution leads to abnormal rates of water-related

diseases and damage to ground water, agricultural output, fisheries and irrigation – all of which are especially harmful to the poor.

In the mid-1990s Moroccan authorities committed to significant investments in urban and rural infrastructure. Reforms related to drinking water and sanitation included a water bill promoting the “polluter pays” principle and the launch of an integrated water resources management (IWRM) system, facilitating decentralisation.

In recent years the high costs of investment and maintenance for waste-water treatment have led to major increases in drinking water tariffs, rising 50% in 2001 and 40% in 2002, with continued increases needed through at least 2007. During 2004-09 a project to clean the Sebou Basin, in Fez, is designed to affect 265 000 people – aiming to improve livelihoods by rehabilitating waste-water networks and creating a waste-water treatment plant – at a cost of more than EUR 80 million. To facilitate an optimal operating system for waste water, local authorities, in line with national policy, have transferred their responsibilities to a public company, Régie Autonome de Distribution et d’Electricité de Fès (RADEEF), responsible for the project. At the same time, the central government has had to subsidise RADEEF for investment financing.

The World Bank, French Development Agency and European Investment Bank have supported the project by financing investments and backing its inclusion in a coherent institutional framework. The project is expected to contribute to MDG 7, reduce water-related diseases, increase drinking water quality, develop irrigated agricultural downstream and improve the technical processes of polluting companies in order to develop exportable products.

Principle 4: Increase infrastructure financing and use all financial resources efficiently

Providing a guarantee for increased telecommunications investments in Uganda

In the late 1990s the Swedish International Development Agency (Sida) provided MTN Uganda with a guarantee for a series of promissory notes issued on the local capital market. The funds were raised to expand the telephone network, with a focus on rural areas. The guarantee – which expires at the end of 2005 – reduced commercial risk and enabled MTN to find buyers and issue securities with longer durations than would otherwise be possible on the Ugandan capital market. The guarantee did not cover interest payments and absolved Sida of political risk (for example, through government intervention). Such risk was borne by the owners of the bonds.

MTN Uganda is a private company owned by MTN South Africa, Telia Overseas of Sweden and Tristar of Rwanda. In 1998 it began extending Uganda’s telephone network and supplying large villages with pay phones. The goal was to install, within five years, nearly 90 000 telephone lines and 2 000 pay phones. (The company’s licence stipulates that Uganda’s 37 district capitals be served and that there be at least one pay phone in each of the country’s 165 municipalities.) With the guarantee provided by Sida – which had a ceiling of USD 10.4 million – the company sought to mobilise USD 9-10.5 million.

The first securities issued by the company were private placements. Subsequent emissions were quoted on Uganda’s stock exchange, enabling the notes to be traded in a secondary market. In 2000, for example, MTN Uganda listed a USD 8 million (denominated in local currency) floating rate note on the exchange. Thus Sida’s guarantee also contributed to local capital market development.

The Emerging Africa Infrastructure Fund – drawing on a range of financing sources to develop private infrastructure

Although the public sector will remain the major provider of infrastructure services in most developing countries, many sub-Saharan countries are seeking to increase private investment. The Emerging Africa Infrastructure Fund is a public-private partnership – drawing on official aid, development finance and commercial debt – that provides long-term financing for private infrastructure. The fund represents a new financing approach for the region, combining public and private funding with commercial and development principles in support of sustainable development and economic growth. The fund was initiated by the Private Infrastructure Development Group (PIDG) – a consortium of Dutch, Swedish, Swiss and UK bilateral donors managed by Standard Fund Managers (Africa) Limited – and, following a competitive tender to the private sector, launched in January 2002.

All the fund's products are offered on commercial terms, based on detailed assessments of borrowers' credit and risk profiles. The fund's structure has reduced lending risks, enabling it to offer competitive long-term (15-year) loans to infrastructure companies across sub-Saharan Africa. Most loans are denominated in US dollars, though the fund may also provide local banks with guarantees to facilitate local currency lending. Through the PIDG Trust, the UK Department for International Development (DFID), Swedish International Development Agency (Sida), Directorate-General for International Cooperation, Netherlands Ministry of Foreign Affairs (DGIS) and Swiss State Secretariat for Economic Affairs (Seco) have jointly committed USD 100 million to the fund to use as equity. The balance of the fund's capital comprises USD 85 million in subordinated debt from development finance institutions (Netherlands Development Finance Company, Development Bank of Southern Africa, Deutsche Investitions und Entwicklungsgesellschaft) and USD 120 million in senior debt from commercial banks (Barclays Bank, Standard Bank Group). The fund considers loans in 44 countries in the region and is focused on commercially viable companies that have a positive development impact on their host economies.

Other PIDG activities include a project development facility (DevCo) that advises governments on increasing private investment in infrastructure, a facility that provides guarantees to encourage local currency funding of such investment (GuarantCo), a project development company (InfraCo) and a facility that provides technical assistance to build local capacity (TAF).

References

InfraPoor Task Team working papers

The main working papers produced for the InfraPoor team's work are listed below. These and other InfraPoor team papers are available at www.oecd.org/dac/poverty.

Thematic working papers

Braithwaite, Mary and Stephanie Meade (2004), "Poverty Relevance of Infrastructure Projects and Approaches of Donors", sponsored by KfW Development Bank.

Curtis, Lisa (2004), "Current Initiatives and New Opportunities for Infrastructure Financing", sponsored by DFID.

Estache, Antonio (2004a), "A Selected Survey of Recent Economic Literature on Emerging Infrastructure Policy Issues in Developing Countries", sponsored by the World Bank.

GENDERNET (DAC Network on Gender Equality) (2004), "Issue Note for Thematic Discussions: Gender Mainstreaming in Economic Infrastructure", sponsored by GENDERNET.

Hesselbarth, Susanne (2004), "Donor Practices and the Development of Bilateral Donors' Infrastructure Portfolio", sponsored by GTZ.

Jennings, Mary (2005), "Poverty Impact Orientation and Target Setting", sponsored by Development Cooperation Ireland.

Osius, Margaret and Cathryn Carlson (2004a), "Domestic Finance Mobilization for Pro-poor Infrastructure: An Exploration of Subsovereign Finance Issues and Policy Guidance", sponsored by USAID and DFID.

Osius, Margaret and Cathryn Carlson (2004b), "International Financing Sources in Support of Pro-poor/ Pro-growth Infrastructure Development", sponsored by USAID and DFID.

Stafford, David (2005), "Regional and Cross-border Infrastructure and Its Role in Trade, Pro-Poor Economic Growth and Poverty Reduction", sponsored by DFID.

Tedd, Leonard (2005), "Infrastructure and Poverty Reduction Strategy Papers: Summary and Annotated Bibliography", sponsored by DFID.

Willoughby, Christopher (2004a), "How Important is Infrastructure for Achieving Pro-Poor Growth?", sponsored by DFID.

Willoughby, Christopher (2004b), "Infrastructure and the MDGs", sponsored by DFID.

Wiman, Ronald, and Jim Sandhu (2004), "Integrating Appropriate Measures for People with Disabilities in the Infrastructure Sector", sponsored by GTZ.

Sector working papers

Batchelor, Simon, David Woolnough and Nigel Scott (2004), "The Contribution of Information and Communication Technologies (ICTs) to Achieving the Millennium Development Goals (MDGs)", sponsored by JICA.

ECI (Environmental Change Institute, Oxford University) (2004), "Energy Report for DAC Network on Poverty Reduction, Task Team on Infrastructure for Poverty Reduction 2nd Workshop", sponsored by GTZ.

IDCJ (International Development Centre of Japan) (2004), "Transport and ICT: Making Infrastructure Pro-Poor, Final Report", sponsored by JBIC.

Kraehenbuehl, Juerg and Oliver Johner (2004), "Water Infrastructure for Poverty Reduction", sponsored by Seco.

- Sakairi, Yuriko (2004), "Issues and Recommendations for the Irrigation Sector Support", sponsored by Japan's Ministry of Foreign Affairs.
- Tambo, Ichiro (2004), "Background and Major Cross-Cutting Issues to Achieve Better Results in Poverty Reduction through Economic Infrastructure Services", sponsored by JICA.
- Infrastructure and poverty reduction**
- ADB (Asian Development Bank), DFID (UK Department for International Development), JBIC (Japan Bank for International Cooperation) and World Bank (2005), *Assessing the Impact of Transport and Energy Infrastructure on Poverty Reduction*, Manila.
- ADB, JBIC and World Bank (2005), *Connecting East Asia: A New Framework for Infrastructure*, Washington, DC.
- Africa Union and UNECA (United Nations Economic Commission for Africa) (2005), *Transport and the Millennium Development Goals in Africa*, sub-Saharan Africa Transport Policy Program, Washington, DC, www.worldbank.org/afr/ssatp/transport_poverty/transport_mdg.pdf.
- Briceño-Garmendia, Cecilia, Antonio Estache and Nemat Shafik (2004), "Infrastructure Services in Developing Countries: Access, Quality, Costs and Policy Reform", *Policy Research Working Paper 3468*, World Bank, Washington, DC, http://wdsbeta.worldbank.org/external/default/WDSContentServer/IW3P/IB/2005/02/08/000009486_20050208104927/Rendered/PDF/wps3468.pdf.
- Estache, Antonio (2004b), *What's the State of Africa's Infrastructure? Selected Quantitative Snapshots*, World Bank, Washington, DC.
- Fay, Marianne and Tito Yepes (2003), "Investing in Infrastructure: What is Needed from 2000-2010?", *Policy Research Working Paper 3102*, World Bank, Washington, DC.
- Foster, Mick (2005), *Transport in Low-income Countries and Sub-national Growth*, UK Department for International Development, London.
- Heller, Peter (2005), "Understanding Fiscal Space", discussion paper, IMF (International Monetary Fund), Washington, DC, www.imf.org/external/pubs/ft/pdp/2005/pdp04.pdf.
- Henry, Alain and Stephane Carcas (2005), "Towards Growth and Poverty Reduction: Lessons from Private Participation in Infrastructure (PPI) in sub-Saharan Africa", AFD (French Development Agency), Paris.
- IFPRI (International Food Policy Research Institute) (2005), *Increasing Access to Infrastructure for Africa's Rural Poor*, Washington, DC.
- Jacquet, Pierre and Olivier Charnoz (2003), "Infrastructure, croissance et réduction de la pauvreté", AFD (Agence Française de Développement), Paris.
- Klump, Rainer and Thomas Bonschab (2004), "A Country Case Study on Viet Nam", background paper for the working group on Operationalising Pro-Poor Growth, Study for GTZ, Eschborn.
- MacDonald, Mott (2005), "Provision of Infrastructure in Post-conflict Situations", DFID (UK Department for International Development), London.
- OECD (Organisation for Economic Co-operation and Development) (2001), *Poverty Reduction, The DAC Guidelines*, OECD, Paris.
- OECD (2004), "GrameenPhone Revisited: Investors Reaching Out to the Poor", Paris, www.oecd.org/dac/ict.
- Sachs, Jeffrey (2004), "Doing the Sums on Africa", *The Economist*, 22 May.
- UFJ Institute (2005), "The Evolution of the Poverty Reduction Strategy Paper in Viet Nam: Acknowledging the Role of Large-Scale Infrastructure in Poverty Reduction and Pro-Poor Growth; Key Issues and Lessons Learned from Viet Nam's CPRGS Process", Ministry of Foreign Affairs of Japan, Tokyo.
- WHO (World Health Organization) (2004), *World Report on Road Traffic Injury Prevention*, Geneva.
- World Bank (2003), *Infrastructure Action Plan*, Washington, DC.
- World Bank (2004a), *Investment Climate and Infrastructure*, Washington, DC.
- World Bank (2004b), *Reforming Infrastructure – Privatization, Regulation and Competition*, Washington, DC.
- World Bank (2005a), *What do we know about sub-Saharan Africa's Infrastructure and the Impact of its 1990s Reforms?* Washington, DC.
- World Bank (2005b), *Water, Electricity, and the Poor: Who Benefits from Utility Subsidies?* http://publications.worldbank.org/e-commerce/catalog/product?item_id=4970970.

World Bank (2005c), *Where is the Wealth of Nations? Measuring Capital for the XXI Century*, http://publications.worldbank.org/ecommerce/catalog/product?item_id=4980649.

World Water Council, Secretariat of the 3rd World Water Forum and Global Water Partnership (2003), *Financing Water for All*, Kyoto.

Pro-poor growth and the MDGs

AFD (French Development Agency), BMZ (German Ministry for Economic Co-operation and Development), DFID and World Bank (2005), *Pro-poor Growth in the 1990s: Lessons and Insights from 14 Countries*, Washington, DC.

AFD, BMZ, DFID and World Bank (2005), "La croissance pro-pauvres", *Lettre des économistes de l'AFD n° 9*, www.afd.fr/jahia/webdav/site/myjahiasite/users/administrateur/public/publications/Lettredeseconomistes/lettre9.pdf.

Commission for Africa (2005), *Our Common Interest*, London.

IMF (International Monetary Fund) and World Bank (2004), *Global Monitoring Report 2004*, Washington, DC.

IMF and World Bank (2005), *Global Monitoring Report 2005*, Washington, DC.

UN Millennium Project (2005), *Investing in Development. A Practical Plan to Achieve the MDGs*, United Nations, New York, www.unmillenniumproject.org/reports/fullreport.htm.

The private sector and infrastructure

Committee of Donor Agencies for Small Enterprise Development (2001), *Business Development Services for Small Enterprises: Guiding Principles for Donor Intervention*, Washington, DC.

DFID (2002), *Making Connections*, London, www.dfid.gov.uk/pubs/files/makingconnections.pdf.

Jaquet, Michel and Michael Klein (2005), "Using ODA to Engage the Private Sector in Poverty Reduction", paper presented at the Annual World Bank Conference on Development Economics, Amsterdam, <http://siteresources.worldbank.org/INTAMSTERDAM/Resources/JacquetKlein.pdf>.

Kroh, Wolfgang (2005), "Eine Dekade Private Wasserversorgung in Entwicklungsländern: Allheilmittel, Kapitalistischer Sündenfall oder viel Lärm um Nichts?", *Erfahrungen der KfW Entwicklungsbank*, Frankfurt.

SDC (Swiss Agency for Development and Cooperation), Seco (Swiss State Secretariat for Economic Affairs) and Swiss Re (2005), "PPP: Guidelines in Urban Water and Sanitation", Bern.

Sida (Swedish International Development Agency) (2002), *More Telephones for People in Uganda*, Stockholm.

Thomsen, Stephen (2005), "Encouraging PPPs in the Utilities Sector, The Role of Development Assistance", www.oecd.org/dataoecd/29/45/34843203.pdf.

World Bank, *Private Participation in Infrastructure (PPI) Database*, Washington, DC, <http://ppi.worldbank.org>.

The UK Department for International Development (DFID, at www.dfid.gov.uk) supports a range of international programmes to promote private participation in infrastructure that contributes to growth and poverty reduction. All are being implemented with other donors. The DFID, Netherlands, Sweden, Switzerland and World Bank have formed the Private Infrastructure Development Group (PIDG, at www.pidg.org) to co-ordinate work on promoting private participation in infrastructure. It is hoped that other donors will join PIDG. The following programmes receive funding from PIDG:

- 1 DevCo Advisory – a project development facility run by the International Finance Corporation (IFC) that advises governments on transactions involving private ownership and investment in infrastructure, www.ifc.org/ifcext/psa.nsf/Content/DevCo.
- 1 Emerging Africa Infrastructure Fund (EAIF) – provides long-term lending on commercial terms to private infrastructure projects in sub-Saharan Africa, <http://www.emergingafricafund.com>.
- 1 GuarantCo – provides guarantees to encourage local currency funding of infrastructure investment by municipalities and domestic financial institutions. Contact: sjansson@guarantco.com
- 1 InfraCo – project development company that puts together infrastructure projects to the stage of being financeable, then tenders them to private investors. Contact: j-hodges@dfid.gov.uk.
- 1 Local Capacity Building Technical Assistance Facility (TAF) – provides grants for local capacity building alongside projects funded by PIDG facilities. Contact: jflora@worldbank.org.

Other international programmes that promote private participation in infrastructure include:

- 1 Public-Private Infrastructure Advisory Facility (PIIAF) – a multi-donor technical assistance facility designed to help developing countries improve the quality of their infrastructure through private sector involvement; it provides advice on the enabling environment (policies, laws, regulations, institutions) for private participation, www.ppiaf.org.
- 1 Global Partnership for Output Based Aid (GPOBA) – supports the design and piloting of performance-based approaches for targeting public funding to the delivery of basic services to the poorest, www.gpoba.org.
- 1 Community-Led Infrastructure Finance Facility (CLIFF) – being piloted in India; provides bridge finance and technical assistance to community-led urban regeneration projects, www.theinclusivecity.org/cliff.htm.
- 1 Slum Upgrading Facility (SUF) – still under development, this programme will provide technical assistance, capacity building and bridge finance to municipalities and local NGOs and community-based organisations to design projects for financing by public, private or donor sources. The DFID and Sida are currently funding a detailed project design phase. Contact: hensby@dfid.gov.uk.

Aid effectiveness

OECD (2001), “Recommendation on Untying Official Development Assistance to the Least Developed Countries”, Development Assistance Committee, Paris.

OECD (2003), “Harmonising Donor Practices for Effective Aid Delivery, Vol. 1”, *DAC Guidelines and Reference Series*, Paris.

OECD (2005a), *Aid Activities in Support of Gender Equality, 1999-2003*, Paris.

OECD (2005b), “Paris Declaration on Aid Effectiveness: Ownership, Harmonisation, Alignment, Results and Mutual Accountability”, statement endorsed at the High Level Forum on Aid Effectiveness on 2 March 2005, www.oecd.org/dac/effectiveness/parisdeclaration.

OECD (2005c), “Recommendation on Harmonisation”, Paris.

More documents on aid effectiveness, harmonisation and alignment can be found at www.aidharmonisation.org and www.oecd.org/department/0,2688,en_2649_3236398_1_1_1_1_1,00.html.

Information and indicators on infrastructure, pro-poor growth and poverty reduction.

Several international initiatives promote and provide data, indicators and other information on infrastructure, pro-poor growth and poverty reduction:

- 1 *Country Analytic Work Web site* – facilitates co-ordination and co operation between countries and donors, and provides a document library, contact points and examples of best practices for analytic work, www.countryanalyticwork.net.
- 1 *InfoDev* – global grant programme, managed by the World Bank, that promotes innovative projects using ICT for pro-poor growth, www.infodev.org.
- 1 *Partnership in Statistics for Development in the 21st Century (PARIS21)* – partnership of policy makers, analysts and statisticians that catalyses the production of high-quality statistics and evidence-based policy making and monitoring, <http://paris21.org>.
- 1 *Poverty and Social Impact Analysis* – assesses the impacts of policy reforms on different stakeholders, with a focus on the poor and vulnerable, <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPSIA/0,,menuPK:490139~pagePK:149018~piPK:149093~theSitePK:490130,00.html>.
- 1 *Transport Results Initiative* – World Bank effort to assess the measures and indicators used in the transport sector, <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTTRANSPORT/EXTTRM/0,,contentMDK:20283374~pagePK:210058~piPK:210062~theSitePK:515307,00.html>.

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Promoting Pro-Poor Growth

INFRASTRUCTURE

Infrastructure is back on the development agenda. After many years of neglecting the need to invest in physical infrastructure, donors are today giving renewed emphasis to the role of infrastructure in growth and poverty reduction. This report analyses the reasons for the decline of public and private investment in infrastructure during the late 1990s. It considers questions such as: How does infrastructure contribute to pro poor growth and how can such investments be used to benefit poor people? How should infrastructure investments be funded, managed and maintained? What are the lessons for donors from previous interventions?

This report results from work carried out by the DAC Network on Poverty Reduction (POVNET). This work has resulted in a set of agreed principles aimed at promoting pro-poor growth in partner countries through support to infrastructure. These guiding principles have also been applied to sub sectors of infrastructure such as transport, energy, information and communication technology, and water, sanitation and irrigation. The objective of the recommendations provided in this report, and in companion reports on agriculture and private sector development, is to change donor behaviour and pave the way for more effective support to pro-poor growth.