Making connections:
Infrastructure for poverty reduction

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CONTENTS

1. THE NEW INFRASTRUCTURE AGENDA

1.1 For at least a decade, many in the international development community - DFID included - have thought of the infrastructure sector as the preserve of old-fashioned and, in some minds, discredited kinds of official development assistance. Such views tend to associate aid for large-scale infrastructure with donor agencies that care more about the quantity of development assistance than its quality and which have a lesser focus - or perhaps a less sophisticated focus - on poverty. This paper takes a very different line, arguing that infrastructure services – not simply the 'hardware' but also the associated institutions and, most importantly, the outcomes for people – should be at the heart of the new poverty agenda that has been developed by DFID since 1997.

1.2 Central to this new approach is the need to make connections between two distinct agendas that have been pursued hitherto with varying success by different donors and developing country governments. The first is investment in national infrastructure as a key driver of economic growth; the second is provision of local services for poor people. Only through a synthesis of these two agendas, and a focused effort to tackle the problems that have undermined them in the past, will the Millennium Development Goals (MDGs) be achieved. Just as there is no sense in developing feeder roads in the absence of trunk roads or building generation facilities where there are no distribution networks, so it will not work to pursue economic growth that has minimal impact on poverty reduction, or to focus purely on direct benefits for the poor when the wider environment in which they seek to secure a livelihood remains hostile.

1.3 The paper was written by a multi-disciplinary team, assisted by many colleagues and collaborators.[1] It draws on a specially commissioned review of economic research that highlights the key role of infrastructure in poverty reduction and summarises the implications for ensuring that support for infrastructure services promotes pro-poor growth and livelihood opportunities.[2] The paper also addresses the problems that have given aid to infrastructure - particularly national infrastructure - a bad name among some donors, and suggests ways of overcoming them, focusing primarily on accountability, capacity-building and the environment, issues that have been too often ignored in the past.

1.4 Approximately 70% of infrastructure investment in developing countries is financed by governments or public utilities from their own resources or non-concessional borrowing, with only around 5%-10% coming from official development assistance and 20%-25% from the private sector.[3] These proportions imply that the focus for donors should be on supporting governments' national planning to ensure that this investment leads to poverty eradication. They also imply that the private sector is already playing an important role, and that donors should use their relatively small contribution to make partnerships between government and the private sector work better.

[1] Tamsyn Barton, John Hodges, William Kingsmill and Adrian Wood. [Acknowledgements]
[2] The review was carried out by Christopher Willoughby in September-December 2001.
[3] See section 4.1

1.5 The paper explores how and where partnerships between public, private and non-profit agencies (as well as users themselves) can both increase investment in infrastructure and enhance its effectiveness in reducing poverty. It looks at the full spectrum of private sector agencies, from multinational companies to street-level water vendors. But even with this range of potential participants, the private sector will not always have a role. In many cases, public sector reform will be the most realistic and politically acceptable choice. In part, this may arise from concerns that equity of service provision will be compromised with private sector involvement, though such concerns should be set in the context of the current inequities of access to infrastructure services, where subsidies usually go to the non-poor.

1.6 Even when the private sector is heavily involved, governments usually need to regulate to ensure equity, efficiency and accountability. Moreover, looking across the whole spectrum of infrastructure sectors, there can be no doubt that large amounts of public expenditure on construction and maintenance are required . This should, wherever possible, be addressed through countries' own Poverty Reduction Strategies (PRSs) and similar mechanisms for setting priorities.

1.7 The paper concludes by suggesting what DFID should do if it fully embraces this new approach to infrastructure services as key to poverty eradication, both from the centre and within country and regional programmes. Among other things, DFID must recognise that the priority often given to infrastructure by national and multilateral partners should not be dismissed. We may often want to consider whether there is a real opportunity to engage with them in making infrastructure services work to eliminate poverty.

2. THE IMPACT OF INFRASTRUCTURE ON POVERTY REDUCTION

A longstanding agenda

2.1 In some ways, the theme of this paper is not new. From its very beginnings, official development assistance stressed investment in infrastructure and there have been many economic analyses to support this emphasis. One landmark study was the World Bank's 1994 World Development Report, which highlighted the vital contribution of infrastructure services to development, justifying the importance attached to them by governments and donors.[4] But the study was also valuable in shifting the focus away from purely technical issues to questions about the institutional setting, laying out an emerging agenda for 'public-private partnerships'.

2.2 The evidence in the World Bank report on the key role of infrastructure services in growth has been reinforced by subsequent research, for example, on Africa's economic performance.[5] What is more, these studies suggest, not only does development of infrastructure services contribute to growth, but growth also

[4] Infrastructure for Development, World Development Report 1994
[5] Collier, P. and Gunning, J.W., 'Explaining African Economic Performance', Journal of Economic Literature, vol. XXXVII, 1999, pp 64-111

contributes to infrastructure development, in a virtuous circle. Investment in infrastructure services can contribute to growth by:

- Reducing transaction costs and facilitating trade flows within and across borders;
- Enabling economic players to respond to new types of demand in different places;
- Lowering the costs of inputs used in the production of almost all goods and services;
- Opening up new opportunities for entrepreneurs or making existing businesses more profitable;
- Creating employment;
- Providing employment in public works both as social protection and as a counter-cyclical policy in times of recession;
- Enhancing human capital, for example, by improving access to schools and health centres.[6]

2.3 While the picture is broadly positive, experience suggests that there is a complex set of variables that needs attention if the development of infrastructure services is to contribute to pro-poor growth. 'White elephant' infrastructure projects are far from unknown. Because of inadequate focus on governance and institutional frameworks, benefits have often been less than anticipated. High levels of personal and political corruption have diverted benefits from the poor, encouraged neglect of maintenance and hindered the contribution to growth. Too often, there have been negative rather than positive consequences for poor people, including environmental damage.

2.4 Along with some other bilateral donors, DFID, influenced by bad experiences of this kind and the growing conviction that the private sector was best placed to provide national infrastructure, decided to limit the scope of its own assistance in the sector to the direct poverty agenda. The first DFID White Paper, for example, focuses primarily on local services for poor people. [7] In the many references to sustainable livelihoods for the poor, there is recognition of the multi-dimensional nature of poverty, and the complexity of livelihood strategies. Physical capital is only one part of the framework in which infrastructure services can improve outcomes for poor people.

2.5 More recently, DFID's Target Strategy Papers have set out clear directions for achieving the Millennium Development Goals (MDGs), and infrastructure services constitute a vital element of these strategies, notably those focused on Urban Poverty, Water and the Environment. Infrastructure is also accorded a key role in the Target Strategy Paper on Halving World Poverty by 2015, which highlights its importance in promoting economic growth, reducing the vulnerability of the poor and underpinning opportunities for livelihood improvements**.**

[6] Adapted from Hanmer, L., Booth, D. and Lovell, E., Poverty and Transport: A report prepared for the World Bank in collaboration with DFID, Overseas Development Institute, 2000.
[7] Eliminating Poverty: A Challenge for the 21st Century: White Paper on International Development, November 1997.

2.6 Significantly, the MDGs include an urban goal. This is a reminder that the urban poor, and the role of the urban sector in eradicating poverty, should not be ignored. In the light of the rapid and continuing urbanisation in developing oountries, it is clear that there must be increased attention to issues of urban poverty, the rural-urban continuum and rural-urban linkages.

2.7 The second DFID White Paper has brought recognition of the key role of infrastructure services in enabling the poor to seize the opportunities from globalisation.[8] It draws particular attention to the important role of national infrastructure such as trunk roads, ports, airports and telecommunications, as well as local infrastructure. Such an approach has also been articulated in key documents of the international development system such as the World Bank's 2000/1 World Development Report.[9]

2.8 Increasingly then, DFID has again recognised the indirect contribution of infrastructure services to poverty eradication. We now need to take a 'joined-up' approach to infrastructure services if we are to meet the MDGs. We have seen the beginnings of a more nuanced understanding of the impact of investment in infrastructure services on growth and poverty.[10] While there is no simple linear relationship, infrastructure interventions can have both direct and indirect benefits for the poor. Because of this potential double contribution, they have been described as 'twice-blessed' and therefore as essential elements of a poverty reduction strategy.[11]

Infrastructure and the poor

2.9 There has already been recognition of the role of infrastructure in meeting the MDGs at national level. The Vietnamese government, for example, sees lack of access to local infrastructure services as one of the central features of poverty. Papers are being prepared by Vietnam's Poverty Task Force, with the aid of external support agencies, which 'localise' the MDGs, using them as the basis for national planning to reduce poverty. One of these focuses on infrastructure, setting out a plan for improving priority infrastructure services in the poorest communes. Proposed quantitative targets cover access to electricity, transport, small-scale irrigation and information. As well as the reliability, financial sustainability and good governance of infrastructure services, emphasis is laid on democratic decision-making at the commune level.

2.10 DFID work on the provision of local infrastructure services has revealed how investment can meet the needs of the poor directly. For example, an impact assessment of DFID work in informal urban settlements in India, which collated the views of poor people themselves, shows a wide variety of benefits from infrastructure, including improved mobility, security and health.

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[8] Eliminating World Poverty: Making Globalisation Work for the World's Poor: White Paper on International Development, December 2000.
[9] Attacking Poverty: World Development Report, World Bank 2000/1
[10] This is based on experience at the local level, and there has not been very much use of this at the national level so far: Booth, Hanmer & Lovell 2000.
[11] White, H., Killick, T. with Kayizzi Mugewa, S. and Savane, M.A.: African Poverty at the Millennium: Causes, Complexities and Challenges: 108-9.

Benefits of infrastructure services: the views of residents of informal settlement in India

An impact assessment of DFID work in informal urban settlements in India confirms that infrastructure service provision facilitates social and economic development, particularly for women. Improved infrastructure services reduce women's work burden and gives them more time; increased space allows for more home-based economic activity, while lighting and better road coverage increase mobility and security at night. With improved roads, hire purchase vendors enter the slum and go from door to door, hawkers come into the slum, and collectors for loans and savings funds have continual access to the slum. The provision of electric lights means that people can work for longer, and that children can do homework after dark.

Road improvements have diverse benefits including changing the image of slums, improving access for pedestrians and vehicles, in stimulating investment, as well as increased social integration. Road improvements are often a catalyst for stimulating improvements in housing and other investments as they visibly demonstrate the legality of slums. But this in turn increases rents and land prices, which can push poorer people out of the slum. While roads generally improve the quality of life, they also make some basic household chores simpler, such as carrying water, and improving livelihood and security.

Infrastructure provision has a significant impact on health, reducing the incidence of illnesses that are related to an unhygienic living environment. Slum-residents have linked infrastructure improvements to a reduction of health-induced crises and debt. Roads also increase access for vehicles to take people to and from hospitals, and for malaria screening programmes to enter the slums. Access is improved, particularly during monsoon seasons when many illnesses peak.

Source: India Slum Improvement Projects' Participatory Impact Assessment: DFID 1997

2.11 There is also evidence of the importance of adequate infrastructure services in providing an enabling environment for business. For example, a survey of Ugandan entrepreneurs ranks the following as key constraints on their ability to do business: power breakdown, voltage fluctuation, telecommunications failure, quality of roads, land and industrial space, water supply, waste disposal, commercial trucking and waste water disposal.[12]

2.12 Sometimes, the poor themselves can see the results of inadequate national infrastructure. Shocks to the national economy, such as the rationing of electricity supplies brought about by the Kenyan drought in 1999, are very evident to huge numbers of people dependent on employment by small enterprises in the informal sector. National infrastructure does affect some poor people's livelihood options quite directly.

2.13 Indirect benefits are harder for poor people to perceive, but it is clear that development and maintenance of national infrastructure are essential if developing countries are to secure the potential gains from globalisation. Working at the local level alone is unlikely to transform an economy. In network infrastructure, this will clearly fail without simultaneous improvement at the national level.

[12] Hanmer, Booth and Lovell, 2000.

Infrastructure and pro-poor growth

2.14 A great deal of research on economic growth confirms the importance of infrastructure.[13] But, given that there is considerable variance in the poverty-reducing impact of a given rate of growth, does investment in infrastructure make growth more pro-poor? As yet, there has been no comparative cross-country research specifically on the role of infrastructure in encouraging a more pro-poor pattern of growth. But there is very strong evidence from elaborate studies of rural development patterns across China and India – countries that have both made major progress in reducing rural poverty – that infrastructure services are crucial.[14]

2.15 These studies demonstrate that a particularly important factor in the reduction of poverty in both countries was the growth of non-farm employment, which in turn was heavily dependent on the availability of infrastructure services. Indeed, it seems that even greater investment would have been economically justified, especially in transport. Other studies also make a convincing case that the economic rates of return to incremental infrastructure investments could now be higher in backward regions, with concentrated populations of poor people, than in better off regions.

2.16 This suggests the importance for pro-poor growth of investment in improving both internal and international interconnections for regions or countries disadvantaged by geography. Compared with coastal countries, land-locked countries and regions typically suffer major disadvantages in the availability and cost of infrastructure services. This has a very large impact on the ability of businesses to operate effectively and their competitiveness in trade, which is one of the main drivers of improvements in incomes.

2.17 Certainly, there is evidence that countries that pursue policies of broad-based access to infrastructure services will find that economic growth is distributed relatively equally among the various groups in society, hence reducing poverty more effectively. This implies that greater stress needs to be given to the importance for pro-poor growth of reducing the very large subsidies still often provided to non-poor users of infrastructure services. Steady reduction would substantially ease the constraints on provision of infrastructure services to the poor as well as on other poverty-reducing programmes. At the same time, it would improve the efficiency of the economy, aiding growth and generally encouraging use of more labour-intensive, less equipment-intensive techniques.

2.18 Of course, it is vital that new investment in infrastructure avoids the mistakes of the past in terms of management and impact on the wider environment. Research indicates that the degree of efficiency in the organisation of infrastructure investment, in its maintenance, and in service provision from it has had a major effect on pro-poor growth outcomes. This points to a large gain from

[13] This section draws on the review commissioned for this paper by Christopher Willoughby: Infrastructure and Pro-poor Growth: Implications of Recent Research. December 2001.
[14] Fan, S, Hazell, P. and Thorat, S. (2000): 'Growth and Poverty in Rural China: the Role of Public Investments: IFPRI; and Fan, Zhang and Zhang.

reform, and indeed from efforts to build capacity in the management of infrastructure. Recent analyses show the importance of tackling personal and political corruption. This will be particularly important in shifting priorities towards maintenance.

2.19 There is also evidence to show that support for infrastructure requires complementary interventions in other sectors to make growth more pro-poor. One study examines how the sectoral composition of economic growth and initial conditions interact to influence the extent to which growth is pro-poor.[15] For example, better rural infrastructure and human development programmes for poor people (encouraging higher literacy) clearly promote higher rates of poverty reduction at a given rate of agricultural growth. Conversely, high initial inequality can explain why the same rate of economic growth may be less effective in reducing poverty in one setting than another. Such inequality may be reflected in income disparities between urban and rural areas.

Infrastructure and employment

2.20 Infrastructure can also contribute to poverty reduction through the opportunities it creates for increasing the employment intensity of economic growth. The importance of employment-generating activities, especially for women, within a sound macroeconomic framework, was highlighted in the first DFID White Paper. There are opportunities in construction, but even more employment should result from service provision and maintenance. For example, the Bangladesh Rural Roads project, which provided important employment for women in construction and maintenance, also provided employment for small enterprises such as rickshaws and cycle repair workshops.[16]

Pro-poor growth through employment: labour-intensive road-building technologies

In capital-intensive road technology options, equipment typically represents 80% of the total cost, while the labour costs are only about 10-12%. For the labour-intensive option, the equipment would represent about 30-40% of the total cost, while labour costs would be 50-60%. Labour will be mainly unskilled or semi-skilled, often offering opportunities to women.

An International Labour Organisation (ILO) review of experience with labour-based road construction in countries as different as Ghana, Lesotho, Madagascar, Rwanda, Zimbabwe, Cambodia, Laos and Thailand showed that the labour-based option is about 10-30% cheaper than the capital-intensive equivalent, reducing foreign exchange requirements by 50-60%, while creating between three and five times the amount of employment for the same investment.

In Ghana, it was estimated that if 20% of public investment and 10% of private investment in infrastructure were in labour-based projects, this would amount to about $100 million a year, and would create 50,000 direct and 75,000 indirect jobs more than with conventional construction.

Source: R.Islam and J. Majeres, ILO, 2001.

[15] Ravallion, M. and Datt, G: When is Growth Pro-Poor; Evidence from the Diverse Experience of India's States', mimeo World Bank;
[16] IFAD Rural Poverty Report 2001; Hanmer, Booth, Lovell, p.43

2.21 Infrastructure also offers opportunities to provide forms of social protection that move people beyond safety nets when employment concerns are linked into mainstream investment policy. Even where the policy environment is poor, such initiatives can have an impact on poverty. With careful attention to trade-offs, the physical capital accessible to poor people can be enhanced at the same time as employment is provided.[17] Choosing sectors and technologies where it is technically feasible and economically cost-effective to use labour-based technologies is crucial. It has been most often used in roads (usually involving private sector contractors), but is also relevant to irrigation, drainage and sanitation, erosion control and water supply; all of which are sectors that can be of direct benefit to the poor.

Mitigating vulnerability and building physical capital: drought relief in India and Kenya

Following two successive years of drought in Madhya Pradesh, the state government instigated the Pani Roko Abhiyan, a drive to create water harvesting and conservation structures using labour-based methods, providing employment for those worst affected, and reducing vulnerability to future droughts. DFID India provided a rapid response to this government initiative, channelling £5 million through the UNICEF state office. Over a period of six months, approximately 6.5 million person days of employment were generated across 32 drought-affected districts. Payment for labour was both in cash and in food. The final review of the project highlighted the effectiveness of this approach in both providing temporary livelihood opportunities (albeit not always to the most vulnerable, and in creating appropriate infrastructure assets. Those employed under the project, particularly women, placed a high value on the food grains provided at a time when crops had failed.

Maintenance is usually highlighted as a concern in relation to public works created in relief programmes, justifiably, when a sense of ownership is not developed by the poor expected to carry out the maintenance. But a rare ex-post impact assessment, reviewing (*inter alia*) infrastructure created under EC-funded drought Food For Work programmes in Turkana, Kenya, from 1985, found vulnerability among marginal pastoralists reduced up to twelve years later by rainwater harvesting structures for sorghum gardens being well-maintained. This success may have been influenced by the early support role of NGOs and the continuing, albeit low-key NGO activity.

Sources: DFID India and C Watson and B Ndung'u, 'Rainwater Harvesting in Turkana: an evaluation of impact and sustainability, ITDG 1997.

2.22 To benefit the poor, it is important not only to look for opportunities to create additional employment, but also to ensure that it is decent work that meets core labour standards. DFID's Social Aspects of Construction study, which aims to show how infrastructure can make a major contribution to poverty reduction and labour rights, is being conducted in four pilot countries: Ghana, Zambia, India and Bangladesh. In Ghana, the Department of Feeder Roads has focused on the International Labour Organisation's four core standards (elimination of child labour, forced labour and discrimination, and the right to freedom of association) together with five others from Ghanaian law relating to wages, hours of work, health and safety, casualisation and social security. Standards are then included as far as possible in the contract, and form part of the pre-bidding briefing, so that costs are included on a level playing field, and are carefully monitored by supervising engineers and unions. Experience shows that all can gain: the labour

[17]. Ravallion, M (1990): Reaching the Urban Poor through Rural Public Employment: a survey of theory and evidence, World Bank Discussion Paper 94, Washington DC. Taylor, G (2000): Labour-Based Technology: the macroeconomic dimension, ILO-ASIST, No. 10, January

standards of the poorest can be improved and employers can also benefit so long as the process is gradual. The essential ingredient is that different parties with different interests are prepared to work together to develop, apply and monitor standards.

3. THE CHALLENGES OF INVESTING IN INFRASTRUCTURE

3.1 Although governments and donors generally accept the significance of the link between the provision of infrastructure services and the elimination of poverty, current investment in the sector falls far short of what is needed. One billion of the world's population have no access to safe drinking water and more than twice that number of people lack appropriate sanitation or access to clean energy sources.[18] Transport services remain woefully inadequate in many developing countries. And it is often asserted that there are more telephone connections in Manhattan than in the whole of sub-Saharan Africa excluding South Africa. At the same time, official development assistance has been in steady decline, and private capital flows, which had been increasing during the 1990s, have declined steeply since the Asian and Russian financial crises of 1997/8.[19]

3.2 But even the challenge of increasing investment is easy in comparison with ensuring that the investment is used in ways that avoid the mistakes of the past. These included lack of attention to maintaining infrastructure once it has been built, inadequate institutions and systems of accountability to prevent the use of infrastructure for political and personal gain and to encourage efficient operation, and failure to assess the effects on the environment, poverty and livelihoods.

Where past investment in infrastructure has typically gone wrong

In the past, investment in major transport, energy, irrigation and telecommunications infrastructure was largely aimed at supporting economic growth. It also paid undue attention to the export and overseas investment needs of companies based in donor countries While projects largely succeeded in their immediate engineering objectives, evaluations by DFID and other donors reveal a range of common problems:

Lack of a clear and accountable process of prioritisation too often facilitated corrupt practices, including looting of public funds and the selection of sub-optimal projects for political or personal gain, which undermined their contribution to growth.

Lack of attention to the management and financing of maintenance led to severe deterioration of the infrastructure. For example, in parts of Africa in the 1990s, the road network was deteriorating faster than it was being constructed.

Environmental effects were often inadequately planned for and monitored. These include land use changes, deforestation, loss of biodiversity, migration to and from project areas and disruption of indigenous populations.

Institutional strengthening and capacity-building in both the public and private sectors received insufficient attention. Key elements of this long-term process include the promotion of appropriate regulatory frameworks and public accountability, establishment of a secure flow of funds for maintenance, and development of commercially oriented business practices.

The effects on poverty, gender issues and livelihoods were seldom addressed in any detail, either in planning or evaluation. Too many large-scale infrastructure projects had unanticipated negative consequences for the poor.

Source: Review of DFID and other donor evaluation material, with staff comments

[18] Addressing the Water Crisis – DFID 2001

[19] World Bank PPI database (2001), OECD IDS Database (2001).

3.3 DFID's work on local infrastructure has highlighted the importance of looking at services for the poor and not simply at the hardware, understanding social difference, including gender, employment issues, the importance of multi-disciplinary partnerships and of promoting accountability. On gender, for example, the South African Treasury's review of its 1998 budget noted the greater benefits for women from improvements in infrastructure: a higher percentage of women than men use public transport, and so improvements in the accessibility and safety of public transport contribute more to the quality of life of women and their access to employment and service facilities.

3.4 New approaches to aid are being adopted, in which DFID is playing a pioneering role among bilateral donors. DFID has been prominent in promoting orientation towards internationally agreed poverty eradication targets, and nationally owned processes, and in using new aid instruments such as budgetary support to underpin this approach. In this context, infrastructure being a priority for national governments allows a strong basis for partnership.[20]

3.5 But this agenda will not succeed unless there is complementary support to improving accountability and transparency**.** For this reason, DFID has also been bringing in a new emphasis in its support to civil society, aiming to strengthen its capacity to render governments accountable.

3.6 Above all, if development agencies are to avoid the mistakes of the past, they can contribute positively only if they ensure integration of the perspectives of poor people as part of a more rigorous process for setting priorities. If we provide assistance (whether in terms of technical co-operation, investment, or simply advice) to governments in improving their national transport infrastructure (for example), we should be ensuring that planning, design and management do not undermine direct work with poor people. Appropriate priority should be given to routes used by poor people, and the safety of pedestrians, cyclists and those using intermediate forms of transport should be addressed by such measures as safe crossing points, or separate lanes. For example, attention to poverty reduction criteria ensured that international credit for the Yamuna road-bridge over the Ganges in Bangladesh was made conditional on the inclusion of lanes for intermediate forms of transport.

Accountability

3.7 Accountability is a very important ingredient to ensure that the mistakes of past investment in infrastructure are avoided. There is no doubt that many of the anti-poor and anti-growth distortions in past infrastructure services are linked to the opportunities to siphon off funds for private or political gain. Some estimates put the cost of corruption as high as 30-50% of the cost of public works. Private

[20] See Annual Review of Development Effectiveness: from strategy to results, 2000, World Bank, Operations Evaluation Department, 2001, World Bank Doc. No. 21550: 19. OED evaluators identified inadequate borrower commitment as the most important reason for poor policy or project implementation (see box 3.1).

sector involvement can play a role by bringing in more commercial practice. But without specific attention, this can just shift the gains of corruption to higher levels of officials. Accordingly, a key starting point is to ensure that there are more transparent and clear processes of investment appraisal, using existing economic techniques for which government capacity can be built, but with stakeholder involvement. To test assumptions and bring active citizenship to render governments accountable, poor people's perspectives need to be integrated.

3.8 In a number of countries, there are experiments with citizen involvement in investment planning at the national level, and infrastructure service provision is one sector where it is already being applied. A recent Forum on PRSs in Dakar stressed the importance of having an infrastructure group, involving civil society, to bring in the views of poor people among other stakeholders. In Uganda, it was because of the role of civil society in organising Participatory Poverty Assessments, that the importance of rural water supply for poor women emerged to inform the PRS.

3.9 It is arguable that, while it may be a sector known for associations with corruption, infrastructure service provision is in fact an ideal sector to foster accountability, because of its tangibility. This is easiest at local level. In Brazil for example, participatory budgeting in municipalities has been extended nation-wide. Infrastructure is a key focus, and citizens vote on infrastructure investments. For example, they decide on the building of a bridge: if the contract goes to the mayor's brother-in-law and delivery is slow, the mayor will be put under pressure. Across Brazil, corruption in infrastructure provision is being increasingly reduced by this approach.

3.10 Even where poor people have not been involved in the planning of infrastructure, there are opportunities, with an active civil society, to reduce corruption. For example, Transparency International, an international NGO, has been supporting "Integrity Pacts" (voluntary anti-corruption agreements between the parties involved in public service contracts) in Colombia, Nepal and Argentina. These build capacity and experience in both public and private sectors in tendering and bidding for public service contracts, mainly for infrastructure. In this way, a level playing field is created for bidders, helping public commitments to stamp out corruption more effective.

3.11 In more and more countries, a process of decentralisation is under way. While fiscal decentralisation has been slow to follow devolution of responsibilities, where this is happening, it has been easier to mobilise community planning and budgeting around infrastructure.

Making decentralisation concrete: infrastructure for fishing in Uganda

A DFID-funded project in Uganda working with local government officials and CARE Uganda is aiming to demonstrate that decentralisation can work for the poor. The project has begun with ten villages on Lake George, with the intention of expanding to 200 villages on Lake Kyoga, facilitating joint planning between villagers and local government. Uganda is beginning with the process of fiscal decentralisation, making resources available to local government. In 2000 [correct?], money was made available only in the last four days of the financial year. Those communities in the pilot villages that had worked to produce their plans and choices of investment were in a position to draw down the funds. Interestingly, infrastructure was a high priority.

Fishing communities depend critically on the services provided by strategically placed landing-sites. Access to these are often controlled by local elites or local administrations, so that revenues generated are invested only outside the community and rarely in the maintenance of fishery resources. Participatory planning has prioritised the provision of community controlled landing sites and has set out policies to apply the revenues to be generated from these to the improved management of the fishery resources. Infrastructure in these cases represents a key focal point for transparent and equitable governance of resources that form the basis of poor people's livelihoods.

Source: CARE Uganda/MRAG.

3.12 Poor people need to have their stake in infrastructure service provision recognised. The World Commission on Dams (which DFID supported) provided an example of a process for bringing together stakeholders (including representatives of developing country governments and the private sector) to agree guidelines on infrastructure planning. It attempted to ensure that the rights of different stakeholders, including future generations, were assessed in as balanced a way as possible.

Capacity-building

3.13 Capacity to deliver infrastructure services for pro-poor growth needs careful and long-term nurturing, and this should be a key emphasis for donors. Governments need support to develop capacity for investment appraisal, for their new roles in bringing in the private sector, and for the development of appropriate regulation essential for the protection of the poor and to promote competition. But the capacity of the private sector also needs building if it is to address a pro-poor agenda. It needs to learn to work with the poor and their representatives, building a sense of social responsibility in its policy and practice. Users and their representatives will also need to learn their own responsibilities in relation to services.

3.14 While seeing infrastructure services in the context of PRSs is very important, and new aid instruments that use a partnership approach fit closely with this, without specific support for capacity-building, provision of budgetary support will fall foul of old problems. Technical co-operation is important and it should not stop at the ministry of finance. There needs to be space for line ministries to use technical assistance to plug gaps, especially in those countries where human capital has been ravaged by AIDS. DFID's work with the Ethiopian Roads Authority is an example of this kind of capacity-building.

Capacity-building in transport: road maintenance in Ethiopia

The road sector in Ethiopia has been undergoing a fundamental series of changes since 1993 when a multi-donor initiative agreed to fund the country's $3.5 billion Road Sector Development Programme. The World Bank, the European Union and the African Development Bank are contributing the majority of the capital budget. Other donors, including DFID, have focused their support on the capacity-building required to ensure that the investment programme and subsequent maintenance activities are managed efficiently and sustainably by the Ethopian Roads Authority.

Since its inception, the programme has reached a number of milestones, including; the introduction of a road fund and board financed directly from a fuel levy; an increase in the use of both large and small private contractors; and decentralisation of authority to local managers who now operate on a performance-based contract system.

DFID's initial phase of support was devoted to improving both the technical and financial capabilities at the headquarters of the Ethiopian Roads Authority. But the focus is now on improving management capabilities at the district level, while other donors concentrate on other areas such as road safety, axle load control and equipment training.

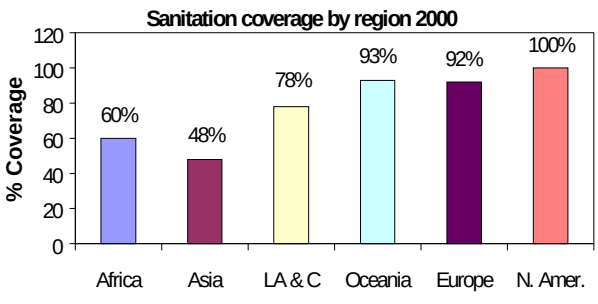
Source: DFID staff

3.15 Given the need to ensure that government and private sector service providers are held to account, it is equally important to enhance the ability of civil society groups to participate actively in decisions about service provision, whether managing their own services, or through active monitoring. Measures to enhance economic literacy will be increasingly important in this monitoring of planning and budgeting. DFID's Latin America Department is already providing support to 'economic literacy' initiatives, a clearly identified gap.

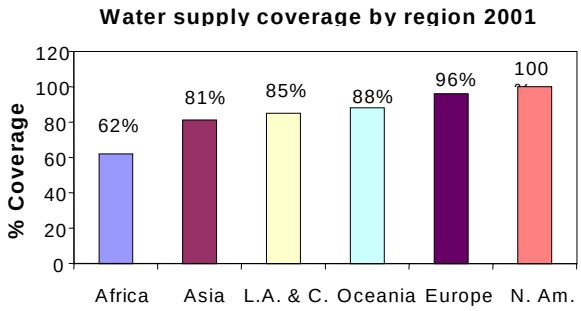
The environment

3.16 In the past, the environmental effects of infrastructure investment have often been ignored. Yet increased attention to infrastructure service provision, at all levels, can make a significant contribution to improving the environment. This applies locally, nationally and to broader international environmental conditions.

3.17 Countless participatory poverty assessments reveal the vulnerability of poor people to poverty as a result of health problems compromising their major asset of labour and blighting their lives. The burden falls especially hard on women, with their role in caring for the sick. Environmental factors are responsible for almost a quarter of all diseases in developing countries. The health of around one billion people in developing countries is affected by problems caused by the burning of biomass fuels to meet their energy needs. Estimates suggest that indoor air pollution resulting from burning such fuels contributes to acute respiratory infections that kill four million infants and children each year and decreases the overall life expectancy of millions more women and children. The second major killer of young children is faecal contamination of water and food. While risk reduction can be achieved by changes in hygiene behaviour alone, this places an unacceptable burden on the poor in a context of inadequate or non-existent waste management systems and limited access to unsafe domestic water supplies. Although improvements in these areas have featured significantly in donor programmes in the past, data on access indicate the scale of the gap remaining.



Source: Global Water Supply and Sanitation Assessment 2000 Report



Source: Global Water Supply and Assessment 2000 Report

3.18 While the development of infrastructure services offers the potential for major improvements in environmental health, it can also introduce new health risks. For example, expanding transport services and mining activities are associated with the spread of HIV/AIDS, and major dams have been linked with new disease risks. Particular problems can be posed for the indigenous populations of environmentally sensitive areas like the Amazon rainforest. [21] While there can continue to be specific environmental initiatives, it is even more important that environmental assessment should be mainstreamed within our pro-poor approach. This implies using cleaner forms of energy, building less environmentally damaging roads, paying more attention to the rights of vulnerable people and encouraging more efficient extraction of natural resources.

Developing sustainable infrastructure: bio-engineering in Nepal

Road construction can often lead to serious erosion and loss of productive land, especially where there are problems of steep topography, unstable geology, and high rainfall. Conventional civil engineering solutions rely on building additional retaining systems and drainage works. An alternative is bio-engineering, which uses selected plant species to stabilise the soil.

These techniques have been used extensively in Nepal since 1984, and most DFID-funded projects now include a bio-engineering component. A bio-engineering advisor works with the Nepal Department of Roads and a training manual has recently been developed. Using bio-engineering solutions provides social, economic and environmental benefits:

- costs are lower than conventional building systems;
- maintenance requirements are greater, but can be carried out using low cost, locally available labour, providing employment for local communities;
- slope stability increases with time as the plants grow and bind together;
- the natural environment -biodiversity, ecology, and scenic beauty - is maintained;
- locally found plant species are often selected for specific sites, which proves better than letting vegetation recolonise naturally;
- schemes are more acceptable to local people, who can participate in design and construction;
- and sites can offer benefits after completion, providing fruits, fodder, building materials and fuel wood for local communities.

Source: DFID staff

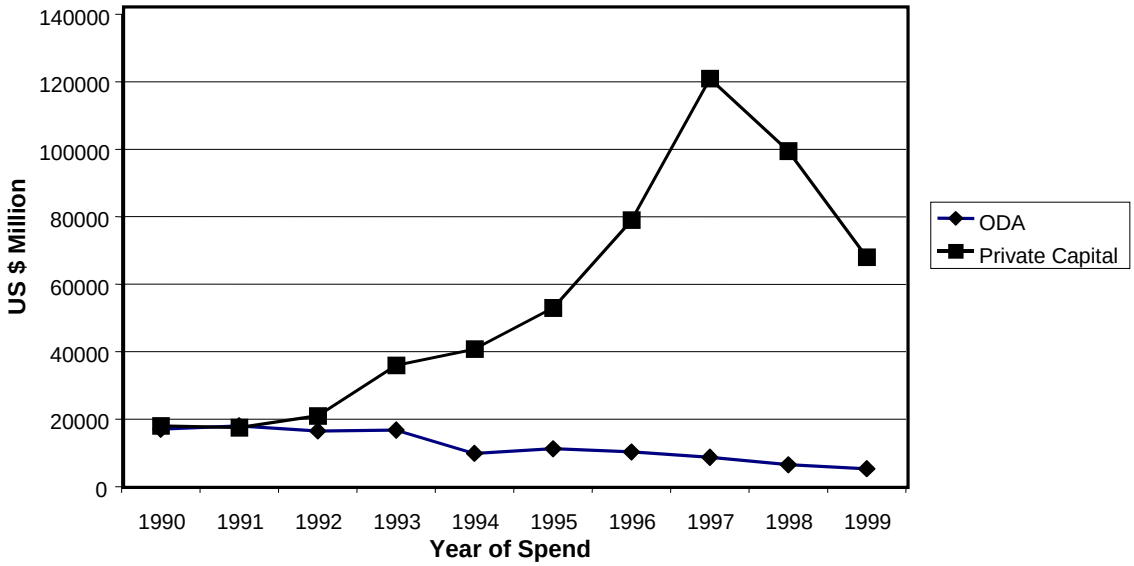
[21] The Polonoroeste Roads program in Brazil was clearly associated with the devastation of the Nambikwara and Yamnomu peoples. Resettlement guidelines, such as those provided by the

4. THE POTENTIAL OF NEW PARTNERSHIPS

4.1 In 1994, the World Bank estimated the total investment in new infrastructure in developing countries to be in the order of $200 billion a year. It is probable that the current figure is nearer to $250 billion a year, but of course the real scale of the demand goes way beyond this. Official development assistance constitutes only around 5%-10% of current total spending. Around 70% comes from developing country government revenues, utility charges or non-concessional borrowing, and the remainder from private investment (See graphs below). With oda unlikely to increase, and government funds constrained, it will be important to leverage more private capital to begin to address this gap.

4.2 One problem is that, although there was a rapid growth in private investment in the infrastructure of developing countries during the 1990s, there has since been a similarly rapid decline, particularly in the wake of the Asian and Russian financial crises of 1997/8, which dramatically reduced investment interest in all parts of the developing world. The position is even worse in the least developed countries, where there has been a sharp decline in infrastructure investment by both donors and the private sector. And while overall official development assistance has remained relatively stable at $50-60 billion a year, donor investment in infrastructure has declined consistently through the 1990s and now stands at around 10% of the total.[22]

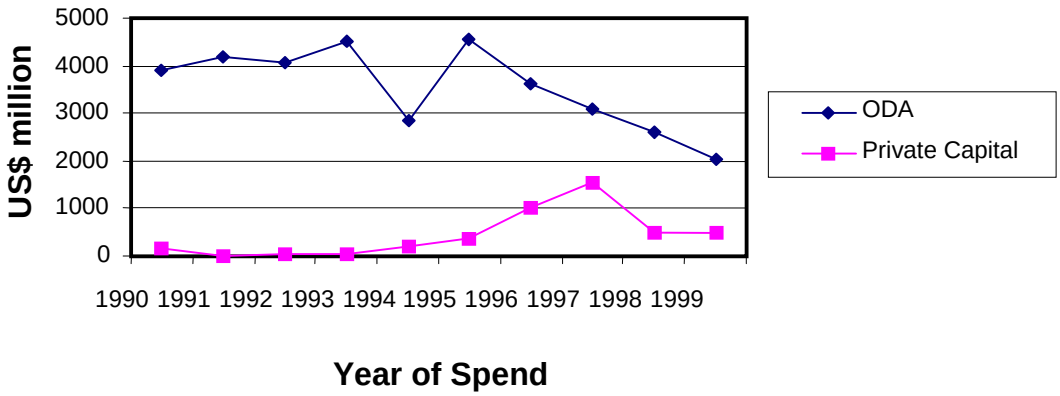
ODA and private capital flows to infrastructure in developing countries



Development Assistance Committee and the World Bank, takes special account of the interests of indigenous people.

[22] Global Development Finance Report 2000: http://www.,worldbank.org/prospects/gdf2000/index.htm

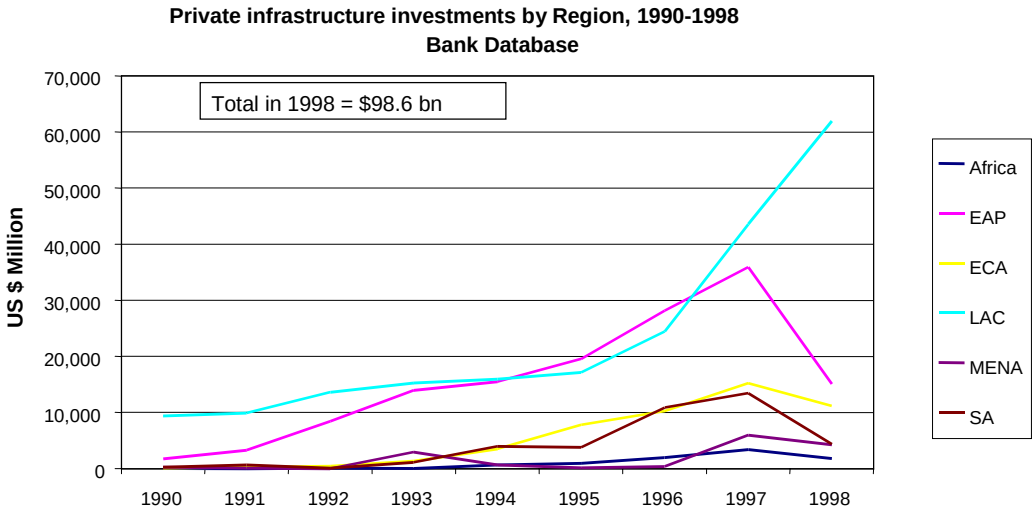
ODA and private capital flows to infrastructure in the least developed countries



World Bank PPI Database, OECD IDS Database, cited in Third United Nations Conference on the Least Developed Countries, LDC III, Infrastructure Development Session, May 2001.

4.3 While the implication of the scale of the demand and the small size of aid in relation to that demand is clearly that donors should be using scarce funds to leverage in more investment from the private sector, it is not a simple process. This is because some parts of the sector have proved easier to reach than others with larger-scale private sector investment. For example, there has been greater private investment in sectors with reasonably rapid returns such as ICT and energy, with much less in transport and the water sector, and much more in national rather than local services. In addition, the poorer developing countries of South East Asia and sub-Saharan Africa have been far less successful in attracting much needed private sector investment than have the emerging economies of Latin America.

4.4 For the international private sector, returns have to be worth the risk. Companies have natural concerns about political commitment. There is frequently no appropriate legislative framework to give potential investors comfort, the utilities are often not structured so as to be conducive for the investment, the returns are in local currency whereas the investment is in hard currency, long-term loans are hard to negotiate with banks (or are simply not available) and insurance against political default on agreements is very expensive. All of these factors, in addition to the high up-front cost in project preparation, mean that such investments remain the exception in the poorer developing countries.



Key:
(Sub-Saharan) Africa
East Asia and the Pacific
Europe and Central Asia
Latin America and the Caribbean
South Asia
Middle East and North Africa

Source: MFI Working Group on Support for Private Infrastructure: Trends in Private Infrastructure, Warwick Smith, wsmith3@worldbank.org, 2001

Choosing how to reform infrastructure provision

4.5 There have been a number of drivers to reforming provision of infrastructure services, often involving partnerships between private sector agencies, governments, NGOs and users. Giving the private sector and other non-government agencies a role has been seen as a way to improve efficiency. It is also seen as a way to increase transparency and, to some degree, improve equity, by insisting on a broadening of service provision beyond the non-poor who have tended to benefit more. But how can companies be encouraged to invest in a way that will both benefit the poor and bring them the returns they want? And how should governments and donors assess the most appropriate arrangements for the ownership and provision of infrastructure?

4.6 The key challenge remains, as it has always been, to develop mechanisms for efficient customer-responsive delivery of infrastructure services and for generating adequate flows of financial and other resources to keep the services going. But recent experiments with different forms of provision have shown the effectiveness of new institutional alternatives to the traditional public sector infrastructure monopoly. These include private provision, commercially operated public sector provision, and user partnerships in provision of infrastructure services. All of these should provide an element of competition for service provision. In these circumstances, the government's role is to concentrate on effective delivery of the many services that it alone can provide, and to ensure pro-poor regulation of private, commercial and community delivery of the other services.

4.7 The important role of competition has been facilitated by trends in technology, particularly ICT. For example, technological change has enabled the breaking up of former natural monopolies, attracting new private entrants. Liberalising telecommunications in Kenya has dramatically lowered the cost of electronic communication. And cellular telephony has dramatically increased coverage: in Uganda, for example, mobile lines reached twice the number of fixed lines within two years. These developments have an enormous impact on a wide range of activities. For example, with communal access programmes, even poor people can be empowered with the knowledge they need on prices, government schemes, oral re-hydration or agricultural techniques, as highlighted in the recent DFID Policy Unit study on Information and Communication Technologies.

Multi-purpose community telecentres

Access to telecommunications and IT facilities can provide benefits if linked to cross-sectoral community development programmes. Services at such telecentres range from a telekiosk providing public telephone and fax services to facilities with computers, e-mail and internet access, and even providing opportunities to produce and broadcast local TV and radio. Benefits cited are better access to government and official data, market and price information, networking with local organisations, teletraining and telemedicine.

In Senegal the state-owned telecommunications operator, Sonatel, is establishing a network of telecentres in rural communities, by installing free of charge in the house of the chef du village, who is then responsible for the management of the installation. Larger facilities are also being set up, additionally featuring photocopying, fax and telex services, and occasionally word-processing and printing services. Between 1993-6, the number of telecentres mushroomed from 541 to 2,934, with employment in the centres rising from 1,100 to 6,000. The policy has shown that even if telephone numbers are as low as one line per 100 persons, they can be made accessible to a large proportion of the population.

Source: DFID Sourcebook on Institutional Development for Utilities and Infrastructure (Box 4.20, p. 87)

4.8 There is a clear role for development agencies in supporting the development of an enabling environment for private investment in infrastructure service provision across a broad range of sectors. Agencies can, for example, provide financial aid to cover revenue losses when public sector telecommunications are privatised. The respective roles of the public and private sectors can be determined only at country level but, with constrained public finance, donors should encourage governments to look at options for deploying funds to encourage private investment wherever feasible, and to help ensure that service provision is sustainable and pro-poor. Targeted finance, aimed at redressing market failure, both in the form of equity (such as that available from the Commonwealth Development Corporation or as long-term loans under the Emerging Africa Infrastructure Fund) and in the form of local finance, is available and its use should be encouraged where appropriate.

4.9 Guarantees and insurance are important to encourage private investment, especially for infrastructure projects where large sums need to be mobilised, and donors can provide support to strengthen existing mechanisms such as the World Bank's Multilateral Investment Guarantee Agency facility and country-level credit guarantee arrangements. There are significant in-country investments (saving, pension funds, etc.) which are not currently being tapped for the

financing of infrastructure because of the inappropriate risk/return ratio and the lack of adequate risk mitigation mechanisms. This is also a potential area for donor support. Developing the institutions to protect intellectual property rights for technology transfer is also of prime importance if the private sector is to risk sharing knowledge. Most important of all is support to development of an appropriate legal and regulatory framework, as without this, it is impossible to ensure that the market can work for poor customers.

Pro-poor regulation within a sector-wide approach: water in Guyana

Halving by 2015 the proportion of people without sustainable access to safe drinking water is one of the targets of the MDGs. The Guyana Water Sector Programme (GUYWASP) is a sector-wide programme, supported by multiple donors (including DFID, the World Bank, the InterAmerican Development Bank, the European Union and the Caribbean Development Bank), promoting sustainable universal access to safe and affordable water for the people of Guyana. GUYWASP forms part of Guyana's PRS, reflecting the priority poor people accorded to accessible and good quality water and sanitation services during PRS consultation processes. Studies undertaken in an initial diagnostic phase were used to build donor consensus in the sector and focus Government attention on necessary policy, legal and regulatory reforms. A phased approach is enabling key issues, such as tariff reform, to be addressed in a systematic and targeted way. The sector is being restructured around a single new public utility that will benefit from international private sector skills and expertise through a five-year management contract. The restructuring is intended to improve accountability and transparency, thereby increasing efficiency and reducing corruption

The development of a National Water Council, and measures to improve the responsiveness of the utility to consumers, are intended to enable poor people's priorities and perspectives to influence both policy and day to day operations. Particular attention is being paid to service provision in the hinterland area where the poorest live.

DFID support of £13 million is focusing on technical capacity-building assistance, with the bulk of the £65 million capital investment being provided by other donors.

Source: DFID Guyana

4.10 Donors can also advise on the appropriate role of the public sector. Arrangements for provision of infrastructure services will clearly have to be context-specific, dependent on the characteristics of a particular service and the strength of a country's institutions. But some general principles can help to frame the discussion. For example, services can be categorised by their degrees of 'contestability' and 'information asymmetry'. Highly contestable markets are ones that allow several suppliers and can thus be opened up more easily to competition, as, for example, power generation. Information asymmetry occurs when the quality of service delivery is not equally clear to purchasers, producers and users, requiring regulation of private sector providers or public sector provision, as for example, in water supply.[23]

4.11 The 1994 World Development Report outlines four main options for the ownership and provision of infrastructure: public ownership and public operation; public ownership and private operation; private ownership and private operation;

[23] See Consultation Draft of WDR 2000, Box 7.4 and Draft of Governance Department paper: The Role of the Private Sector in Service Delivery.

and user partnerships.[24] The remainder of this section describes recent experiences and the future potential of these options plus a fifth one, partnerships with the informal private sector.

Public ownership and public operation

4.12 In the majority of developing countries utility ownership still rests in the public sector. Typically, these organisations operate as a centrally managed public enterprise or government department under single service provider monopoly arrangements. The management is often given little, if any, financial autonomy, or any real incentives to improve service delivery. More often than not, they are required to deliver services at below cost for political reasons and hence lack investment both for maintaining the existing infrastructure, which gradually declines, and for expansion and improvement. Again for political reasons, they are frequently overstaffed at all levels with employees being ill paid and poorly motivated. This means that corruption is rife, resulting in skewed priorities, diverting services away from the poor.

4.13 Bringing in the private sector is often politically controversial. In many countries, it is not likely to be possible for some time, if ever, to ensure that all services are provided commercially in a pro-poor way. Many areas are unattractive to the private sector. There are, however, options for improving the efficiency and cost effectiveness of public utilities and there have been some successful experiences in this. As the performance improvement of the state-owned water company in Sao Paulo suggests, managers must be motivated to deliver and both they and their staff should be appropriately remunerated. They also need to operate under legislation that limits the opportunities for political interference.

An efficient public utility: water provision in Brazil

SABESP, the state-owned water company that provides for the majority of the 22 million inhabitants of Sao Paulo state in Brazil, is the world's largest water utility. Since 1995, it has undergone extensive restructuring to improve its operating efficiency by both expanding revenue generation and cutting excessive costs. In the course of 1995 alone, the proportion of the population in the service area that was supplied with treated water increased from 84% to 91%, the proportion receiving sewerage services increased from 64% to 73%, and non-functioning accounts plunged to 8%. Operating costs were reduced by 45%, partly by outsourcing.

SABESP can now finance its investment programmes through loans and its own funds (though its finances were adversely affected by the currency devaluation of 1999, which increased the cost of foreign debt). SABESP is also effectively carrying out its environmental responsibilities, including a major clean-up of theTiett River, considered to be the largest environmental scheme in Latin America, completed in 1998.

Source: PSIRU database; 'Brazil looks for Foreign Investors', Global Water Report, FT Bus Rep: Energy: 8 May 1997.

4.14 For a publicly-owned, publicly-operated utility to function successfully, it is necessary to allow it to operate on commercial lines, generally as a public corporation which, wherever possible, recovers the full financial costs of its operations through charges. Any subsidies by government to help the poorer

[24] In the report, this option is described as 'Community and User Provision'.

sectors of society should be provided direct to the user rather than to the supplier.

4.15 A similar approach is possible even where no direct charge for services is appropriate, for example with roads. A roads agency can be formed which is financed through a set levy on fuels and given the freedom to undertake operations against levels of access targets negotiated with the line ministry.

Public ownership and private operation

4.16 Private operation of a state-owned utility is a model increasingly used in developing countries, since the risk is seen by the private sector as generally being lower than for full privatisation. There are many versions of the approach, the most commonly used being contract management (where a contractor operates a facility on behalf of government for a fixed fee) and franchising arrangements (where the franchise delivers a service for a set period, including providing finance for any expansion of the system).

4.17 Contract management of a utility can also increase the knowledge of the facility by the contractor so that they will be willing to invest their own equity in it in the longer term. If this is the longer-term plan, operating contracts should ideally be split between different contractors in order to facilitate competition in the eventual privatisation. Even where wholesale liberalisation is inappropriate, it is clear that some areas of work can see dramatic improvements in performance, such as billing and collection, when contracted out to the private sector.

Bringing in private sector operators: water concessions in Manila

Metropolitan Manila Water and Sewerage System (MWSS) serves an area of 11 million inhabitants. In 1997, only 65% of the households had a water service connection and 8% a sewerage service connection. On average, connected water customers received water supply for 16 hours a day; unaccounted for water, at 60% of water put into supply was exceptionally high; and efficiency in terms of employees per 1,000 customers was very poor by international standards.

The exceptionally weak performance of the utility under public ownership led to a plan to introduce private sector participation through two geographical separate 25-year concessions, which divided metropolitan Manila into two roughly equal zones (East and West). The concessions were put out to bid on the basis that no one company could be involved in both zones. Bidding was in terms of the proposed scale of reduction in tariffs offered. The Ayala-International Consortium won the East Zone concession on the basis of proposed tariffs at just over 26% of the pre-existing tariff, while the Mayniland Water Services Consortium won the West Zone concession with a tariff bid of roughly 57% of the pre-existing level.

The immediate gains from the concessions have been dramatically reduced tariffs for customers, a reduction of over 20% in total manpower, and improved leakage control and billing. In the longer term, coverage levels for both water and sewerage are contracted to rise (universal service for water, 83% for sewerage) with approximately $7 billion of new investment expected over the duration of the concession.

Source: DFID Sourcebook on Institutional Development 2000.

Private ownership and private operation

4.18 Encouraged by donors, many governments are reducing strains on public sector budgets through divestiture of state-owned enterprises, including utilities. The private sector is also increasingly entering the utilities market through investment in new infrastructure, but in most developing countries, such investment is still largely confined to sectors that offer a fast return on capital with minimum risk.

4.19 Led by the World Bank, new approaches are being developed for working with the private sector under both franchising arrangements and full privatisation under the heading of 'output-based aid'. Under this arrangement, support is provided via a government subsidy to attract the investment and/or to ensure service delivery to disadvantaged groups via an agreed payment for an agreed level of service. Such aid can be paid direct to the company against checks on service delivery, or given to the end-user in the form of vouchers to enable them to pay these to the company for ultimate reimbursement by government. This method is particularly useful where the end-user has a choice of supplier. Many other versions of the output-based aid approach are being developed in the broad service sector that includes infrastructure services, but also goes beyond this into such areas as health and education.

Financing the transition to cost recovery: water tariffs in Guinea.

In 1989 Guinea entered into a lease contract for water services in its major towns and cities. The government was committed to cost recovery for the services but wanted to avoid a major tariff rise at the beginning of the contract - the projected increase was from an unsustainable $\$0.12/m^3$ to $0.67\$/m^3$ to ensure sustainable services to the poor. This required a $16.9m IDA credit to finance an output-based subsidy to allow user rates to be raised gradually over the subsequent six years.

The subsidy was also designed to achieve two objectives from the operator's perspective: first, to preserve incentives to improve performance by linking support to the operator's outputs; and second, to protect the operator against foreign exchange risks, which are often a disincentive to private investors in developing countries.

Source: 'Contracting for Public Services: Output-based Aid and its Applications', Penelope Brook and Suzanne Smith, World Bank 2001.

Partnerships with the informal private sector

4.20 It is not just large-scale formal private enterprise that can provide infrastructure services. The poor often rely on small-scale private sector infrastructure services, for example, for their transport (lorries and shared vehicles) and sanitation (latrine construction and emptying), while the non-poor may benefit from cheaper, subsidised formal public sector provision. There are many instances of illegal private sector suppliers of energy or water services, who often operate without paying the public supplier, while charging residents in informal settlements.

4.21 While some of this private sector provision is part of a pattern of exploitation of their clientele, there are opportunities to make the informal private sector work better for the poor. Water vendors are often reviled, but research shows that their provision of water in affordable amounts, at the convenience of the poor, is often

valued. Where utilities struggle to operate existing systems in rapidly expanding cities, water vendors arguably could provide the best service for poor people. Linking them to the public utilities, and to the large-scale private sector where it is involved, as a means of distribution, with appropriate tariff and payment options being put in place to lower barriers to entry, and providing business development support, is likely to provide a sustainable solution.[25]

4.22 Enterprise development in water does work, according to World Bank research: 'Small-scale operators (in water and sanitation) tend to be customer-driven, financially viable, and ready to apply innovative technologies and marketing methods. They provide appropriate solutions in appropriate places, assume all investment risks, and reach the poor. They charge market prices, cover costs and respect willingness to pay.' [26]

User partnerships

4.23 The bringing in of users as partners is driven also by budget considerations. Recognising how much poor people are already paying for private sector supply of services, or the time they spend on self-supply (of water, sanitation, fuel, transport) where public supply is absent, the World Bank and other donors have been promoting approaches that at least ensure services meet demand and that there are incentives for maintenance because of high levels of collective user investment in labour, materials, finance and time for management.

4.24 While there have been substantial improvements in efficiency in many cases, there are often questions of equity, while subsidies remain concentrated on the non-poor and yet the poor have to pay so much. This is where the local level needs to connect with the national level. Also, the limited material and human resources on which the poor draw mean that, without continuing partnership with the voluntary sector and government, sustainability may be compromised.

4.25 There is a need to use experience from partnerships for infrastructure services between governments, NGOs and the private sector. Work in this area has highlighted the need for capacity-building for state, private sector, non-profits, and community-based organisations. In particular, the ability of the poor to monitor the efficiency and equity of public investments in infrastructure needs developing. At present, the NGO sector, best placed to build this capacity, is still too focused on service delivery. But in many developing countries, the most valuable role NGOs can play is to strengthen the capacity of the poor, whether to manage their own services, or render providers accountable. This is the emphasis of DFID's rights-based approach, which stresses the importance of poor people's participation in decision-making about what affects them, the importance of inclusion (disadvantaged groups should not be excluded from infrastructure services), and of governments' fulfilling obligation to enable service provision.

[25] Ravallion, M (1990): Reaching the Urban Poor through Rural Public Employment: A Survey of Theory and Evidence, World Bank Discussion Paper 94. Washing DC. Taylor, G (2000): Labour-based Technology: The Macroeconomic Dimension, ILO-ASIST, No.10, January.
[26] Competition in Water and Sanitation: the Role of Small Scale Entrepreneurs. Tova Maria Solo: World Bank website

User partnerships: community billing in India

Since 1995, the electricity supply in Orissa has been restructured and privatised. Most of the state's 39,000 villages are electrified with tariffs for domestic consumers and for irrigation pumps set well below the cost of power to the distribution companies. Losses are theoretically offset by profits on power provided to industrial users.

Some problems inherited from pre-privatisation remain but one positive has been in decentralisation of responsibilities. It was found that in a few villages, community members were collaborating with local linesmen to control unauthorised power use and facilitate meter reading and bill collection in return for an improved supply. So one of the companies responsible for distribution funded an organisation to pilot similar arrangements in 100 more villages. The results are impressive. With the committees given full powers of reading meters, billing, connection and disconnection, and bonuses given for collection of debts, collections have increased by over 100% in the first six months and in some cases, power deficits were converted to surpluses. This scheme now works in 3,100 villages and demonstrates successful partnership between community organisations and the private sector.

Sources: DFID: Sourcebook on Utilities and Infrastructure; N.K. Dubash and S.C.Rajan: Power Politics: Process of Power Sector Reform in India, Economic and Political Weekly, September 1, 2001.

5. THE WAY FORWARD

5.1 This paper implies a clear agenda for DFID and the broader development community. Central to this agenda is promoting adequate funding for the provision of infrastructure services at both the local and national levels and ensuring adequate links between the two in order to maximise cost-effective service delivery with particular attention to growth that benefits the poor. Key emphases will need to be on accountability, capacity building and the environment, as well as new partnerships between the public, private and non-profit sectors. DFID will use its limited resources where the opportunities arise to advocate and assist changes in policy and practice, overcoming the barriers to making infrastructure services work for poverty reduction.

What will DFID do from the centre?

5.2 The centre will provide information, training and support for DFID staff to integrate infrastructure development into poverty eradication. This will be fitted into existing training where practicable, and include:

- Case studies of best practice in integrating infrastructure service provision within PRS processes;
- Examples of effective legal, administrative and institutional reform making markets work for the poor;
- Case studies of innovative approaches to financing and managing infrastructure services involving public, private, non-profit and community-based management.
- Practical guidance on how to appraise options for infrastructure service provision, incorporating new approaches;

5.3 DFID's substantial Knowledge and Research programme is a resource to the international development community, currently being used by the World Bank and other donors without similar resources. It should continue to inform both

training and support for DFID staff, but be increasingly developed to inform and influence other donors, governments and other partners. We have recently taken a lead in bringing donors together to encourage and facilitate increased private sector involvement in the infrastructure of developing countries, for example:

- PPIAF (Public-Private Infrastructure Facility), a multi-donor technical assistance facility aimed at helping developing countries to improve the quality of their infrastructure through the use of private sector resources, has now been operational for two years and has attracted support from eleven other donors. Current demands exceed resources and we will seek to build on this success.
- EAIF (Emerging Africa Infrastructure Fund) is about to be launched with an initial capital base of $300 million. The feasibility study for the facility showed an immediate need for $11 billion of investment. There is obviously scope to increase the capital base of EAIF and to establish a similar mechanism to cover urgent needs in the poorer countries of Asia (and possibly elsewhere). We will work with other donors in order to look at possibilities for building on the EAIF initiative.
- Municipal infrastructure poses a specific problem for the mobilisation of local private sector investment. We will continue to collaborate with other donors to help address this need.
- Under its new public/private partnership, the Commonwealth Development Corporation will be encouraged to help provide increased equity investment in the infrastructure of developing countries, and as such, act as a key partner to the EAIF initiative (and other future similar initiatives).
- Through our International Division, we will increase our efforts to raise awareness of the need to give sufficient attention to pro-poor infrastructure where this is not already a priority area for the agency. We will be more positive in dealing with those agencies already emphasising infrastructure, while attempting to influence them along the lines of the approach advocated in this paper.

What can DFID country and regional offices do?

5.4 DFID clearly is unable to provide support to all sectors in all our partner countries. But, where the lack of infrastructure services is a major constraint to poverty elimination in one of our partner countries, and where this constraint is not being addressed by others, we will seek to provide support, within the limits of our resources and the priorities agreed with government, to help address this constraint.

5.5 The new approach to development assistance in a national context means working within national strategies for poverty eradication. Governments often spend heavily on infrastructure investments, and when appropriate, DFID will liaise with other donors to support appropriate analysis of the best ways to invest in this sector in order to make the most difference in the lives of poor people. This support can be on the demand side (for example, support to Participatory Poverty Assessments) or on the supply side (through the use of rigorous tools for assessing the indirect contributions of different options for national infrastructure). It should not exclude consideration of urban infrastructure, given a new priority in the Millennium Development Goals.

5.6 We will look to improve professional and technical standards in infrastructure service provision and to improve training through engagement with the engineering profession, as we have done through the Institutes of Civil Engineers in Bangladesh and India.

5.7 Budgetary support can allow realistic infrastructure planning, without the distortion of different donor agendas. It can ease revenue shortfalls during regulatory reforms, for instance in the telecommunications sector. It can work in synergy with sector-wide approaches (SWAPs), which focus on building capacity in the sector. SWAPs can support sector reform, as with the Orissa Power Sector Reform project in India. But we will give increased attention to transparency monitoring, especially where decentralisation facilitates it, in order to prevent corrupt diversion of donor funds and lack of attention to poverty priorities. We will encourage our partner government to give due consideration to infrastructure service needs under budgetary support arrangements with particular attention to the need to develop appropriate institutional and human capacity in both the public and private sectors.

5.8 Where public sector reform is key to poverty reduction strategies, it is important to look for ways to encourage private sector investment, promoting competition. For this, international initiatives such as PPIAF will be brought into play with encouragement from Country Programme Managers, or national initiatives such as the potential India PIFF (built on a similar model) will be encouraged. In some countries, such as China, there are opportunities to create synergies between grant-funded tertiary infrastructure with government/private sector supported provincial-level infrastructure. We will look to maximising the benefits from such links.

5.9 Direct government subsidies can on occasions be appropriate, even for fully privatised utilities, both to ensure equity of service provision and to maintain the viability of the utility operation. Where such subsidies are seen as being justified, we will encourage overt provision at the point of delivery (for example, through voucher systems) and, where appropriate, we will be willing to provide grant funding to support these subsidies.

5.10 In many developing countries, the main problem is the deterioration of the current infrastructure stock, rather than a need for new infrastructure. In these circumstances, we will stand ready to work with governments and help them plan and implement appropriate asset management strategies, including looking at opportunities for bringing in private sector expertise and funding.

5.11 Challenge funds are playing an increasingly important role in supporting innovation and providing visible examples of success. The Urban C3 Challenge Fund in Zambia has been successfully integrated with the geographically funded PROSPECT project for instance. Challenge Funds for small enterprise and for civil society policy work can also complement major financial support in partnership with other donors. We will look for opportunities for building such links.

5.12 In summary, DFID will use its support and influence to bring infrastructure service provision firmly within international, national and local policy frameworks and processes for poverty reduction, ensuring that assistance to national level infrastructure works in synergy with local infrastructure. Our support for investment in infrastructure will maintain a focus on local services for poor people. But it will also be oriented towards opportunities to improve national infrastructure services in ways that fit with this. And it will increasingly support facilities that encourage the private sector to participate in ways that serve the poor.