



The economic rationale and modalities for rural infrastructure development: developmental local government in rural service delivery

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Rural Developmt

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LIST OF ABBREVIATIONS

ANC	African National Congress
CARCAM 2000	Community Access Road Construction and Maintenance
CARNS	Community Access Roads Needs Study
CBO	community-based organisation
COLTO	Committee of Land Transport Officials
CORD	Community Organisation Research and Development
CSIR	Council for Scientific and Industrial Research
C/T	calls per telephone
DBSA	Development Bank of Southern Africa
FRELOGA	Free-State Local Government Association
FSP	Farmer Support Programme
GCIS	Government Communications and Information Service
GDP	gross domestic product
GEAR	Growth, Employment and Redistribution programme
GNP	gross national product
IDP	Integrated Development Plan (to be drawn up in each municipality, in terms of Section 84 of the Municipal Structures Act, Act 117 of 1998)
LDO	Land Development Objectives (to be drafted at local level, in terms of the Development Facilitation Act, Act 67 of 1995)
MAC	manufacturing-agricultural complex
MCT	multipurpose community telecentre
MEC	Member of the Executive Council
MERG	Macro-Economic Research Group
MIIF	Municipal Infrastructure Investment Framework
MINCOM	Ministerial Conference of Ministers of Transport
MINMEC	Ministerial-MEC Forum
MPCC	Multipurpose Community Centre
MPT	Multipurpose Community Telecentre
MTN	Mobile Telephone Networks
NGO	non-governmental organisation
NPV	Net Present Value
OECD	Organisation for Economic Cooperation and Development
PSTN	public switched telecommunications network
RDF	Rural Development Framework
RDP	Reconstruction and Development Programme
RIIF	Rural Infrastructure Investment Framework
SATRA	South African Telecommunications Regulatory Authority
SETA	Sectoral Education and Training Authority
SMME	small, micro- and medium-sized enterprise
TLC	Transitional Local Council
TRC	Transitional Rural Council; also Transitional Representative Council (rural local authorities which are subordinate to district councils)
USA	Universal Services Agency

PREFACE

Rationale

The Policy Unit of the Development Bank of Southern Africa (DBSA) has developed a number of *strategic themes* embracing many cross-cutting issues. The main thrust of the Unit's work, however, focuses on the core mandate of the Bank – infrastructure. In order to provide for a coherent whole, rural infrastructure must fit into a broader policy framework. Globally, the goals set for the first two decades of the next millennium are to *address poverty* and *achieve food security*. The DBSA can contribute to South Africa's position on these global themes by addressing the issue of rural infrastructure delivery, taking cognisance of the South African government's Growth, Employment and Redistribution (GEAR) programme. This discussion document will specifically address the local economic development activities of farm production and rural livelihoods in order to achieve food security, address poverty and foster economic growth in the marginalised, infrastructure-deprived rural areas of the country. It is assumed that additional entrepreneurial economic opportunities will arise at village and town level as producers become nett surplus producers, eg in small grain milling, cottage industry, village markets, processing (value adding), etc.

In contrast to urban development, where economic activity is assumed by investing in infrastructure, the DBSA will actively have to support the transformation of economic activity in the rural scenario. One of the past successes of the DBSA has been the introduction of the Farmer Support Programme (FSP). The FSP's provision of services and support, based on the needs of existing smallholders, is embedded in participatory planning and action. Without local initiatives, rural infrastructure cannot be delivered effectively to bolster economic growth, create jobs and redistribute income.

Most of the country's poor live in rural areas, and without rural development there can be no GEAR. Life in these areas needs to be made liveable by encouraging entrepreneurial development, which includes facilitating agriculture, creating jobs and increasing rural income through appropriate government actions for improving the welfare of rural households. One of the ways in which national, provincial and local government could have a broad-based impact is by providing rural economic infrastructure and, to this end, local government, including regional and district councils, has been mandated to develop integrated development plans. These plans have to include economic development plans, and entrepreneurial development has been singled out as important in this regard. From this it follows that district councils and municipalities have a prime responsibility for developing entrepreneurs, including farmers in their rural constituency.

Purpose

This discussion document examines the *economic rationale* for rural infrastructure development. Having established *prima facie* that it is both economically and socially justifiable to invest in physical and social capital in areas with poor endowments, the document examines modalities for infrastructure development and delivery within the South African system of government.

Organisation

The document is organised in three major parts, which follow on the introduction. Part I is a literature study of international and local experience, and examines the economic rationale

for infrastructure development in rural areas. Part II deals with the institutional requirements for sustainable rural development, focusing on rural transport infrastructure (roads) and rural communications (mainly telephones) as the main drivers of the rural economy. Part III examines developmental local government as the major service provider in integrated rural development.

The discussion document highlights policy and institutional gaps in infrastructure delivery for sustainable rural development, as well as some successes with rural development planning at provincial and district council levels in certain provinces.

INTRODUCTION

Objective

This document examines the *economic rationale* for rural infrastructure development. Having established *prima facie* that it is both economically and socially justifiable to invest in physical and social capital in areas with poor endowments, the document examines the role of 'wall-to-wall' developmental local government in providing a '*one-stop centre*' for rural development.

Most of the country's poor live in rural areas, and without rural development there can be no growth, employment and redistribution. Life in these areas needs to be made more liveable by encouraging entrepreneurial development, which includes facilitating agriculture, creating jobs and increasing rural income through appropriate government actions for improving the welfare of rural households. National, provincial and local government could have a broad-based impact through the provision of rural economic infrastructure. Local government, including regional and district councils, has been mandated to develop Integrated Development Plans (IDPs) that have to include economic development plans, and entrepreneurial development has been singled out as important in this regard. From this it follows that district councils and municipalities have a prime responsibility for developing entrepreneurs, including farmers in their rural constituency.

Executive summary

Economic rationale for infrastructure development

Rural infrastructure, roads in particular, and communication serve many economic and social purposes. Rural roads are important for agriculture as a strategy for households' livelihoods and for increasing the array of livelihood choices available to very poor, spatially captured households by providing access to job opportunities, schooling, health services and shops in nearby towns.

The important role that rural development could play in growth and equity policies should be emphasised. Increased public investment in economic infrastructure in rural areas is justifiable, not only on social but also on economic grounds.

Transport and communication infrastructure, mainly rural roads and telephones, are recognised as being the main drivers of the rural economy. Rural roads are necessary for the development of agricultural markets: they bring in production inputs and take out produce. Telephones and radio provide information on markets and save enormously on transaction costs for both farmers and small enterprises. Interestingly, the very poor garner most of the increases in income resulting from increased physical and social capital investments made by the public sector in rural areas.

Most agricultural industries are bound to their locality, eg mills and cotton gins, dairies and fruit packhouses. A lack of infrastructure will discourage *complementary investment* by the private sector in setting up these labour-intensive value-adding industries. Development of supporting infrastructure leads economic activity in the case of place-bound industry. There is also evidence that a more *equitable distribution* of per capita income could lead to greater economic growth than when economic growth takes place without redistribution. Stated simply, when money is put in the hands of the poor they will spend it on food and clothing,

thus benefiting agriculture and local manufacture of basic goods. These sectors in turn create more low-skilled jobs, leading to second and third rounds of economic activity.

Poverty affects millions of people, with the majority of them being women and minors living in rural areas. Of the 17 million poor people in South Africa, at least 11 million live in rural areas. The rural economy is inextricably linked to agricultural production as the engine of growth and, although not commonly realised, agriculture makes a major contribution to the economy. Furthermore, given the necessary support, small-scale farming can make a significant contribution to food security and economic growth.

A great deal of research has been done globally on rural systems that are under stress, but basic infrastructure, such as roads and transport, communication (especially telephones) and energy, is normally assumed to be adequate. World Bank studies on the socio-economic impact of rural infrastructure provision in China, India and Bangladesh could, however, provide valuable lessons for South Africa:

- In India, the uneven progress in different national states was examined over a period of 40 years. It was found that differing initial conditions, starting with better infrastructure and human resources, saw significant higher long-term rates of poverty reduction – differences that reflect past public spending priorities.
- China has seen remarkable growth over the last two decades. In a study of 131 counties targeting 44 poor-programme counties, it was found that the support programme had had a significant impact on the living standards in the targeted areas.
- In Bangladesh, a comprehensive study in 1990 focused on household economies and the benefits of infrastructure, particularly for the poorest segments of the population. Roads and transport, as key contributors to development in rural areas, were the primary forms of infrastructure considered. Relevant findings include the following:
 - Infrastructure directly affects agricultural production through diffusion of technology, use of inputs and its effect on prices.
 - Infrastructure development indirectly affects the composition of employment by making non-agricultural jobs more easily accessible to persons with better skills and some assets.
 - Infrastructure endowment caused household income to rise by 33 per cent.
 - Infrastructure indirectly encourages savings through its positive effect on outcome.
- Public actions and investment in infrastructure strongly affect agriculture. In the North-east Asian ‘miracle’, the governments taxed agriculture punitively and reinvested the funds in rural services, notably in roads and irrigation. By contrast, sub-Saharan Africa has fared less well. Agricultural multipliers and, consequently, growth were found to be lower in Africa than in Asia owing to the lack of a number of factors, including infrastructure.
- Location can make the difference between growth and shrinkage in living standards of otherwise identical households. A spatial poverty trap exists if households living in areas that are better endowed with physical and human capital experience improvements in standards of living, while other households do not.
- Agricultural stagnation in sub-Saharan Africa can be contrasted with the Asian model of economic development. The Asian countries achieved considerable success in expanding their agricultural sector before urban industrialisation was advanced enough to absorb large numbers of workers. Building better land infrastructure through terracing, land levelling and irrigation created suitable conditions for the introduction of modern land-saving technologies. By contrast, the low population densities in sub-Saharan Africa

associated with highly scattered settlements result in extremely high transportation and communication costs, inevitably leading to isolation and underdevelopment of rural communities.

- Communication is a prerequisite for primary production for the market and for trade, commerce and industry. Access to communication infrastructure facilitates economic growth, reduces transaction costs and thus increases the return on the firm's own capital. Countries well endowed with communication infrastructure see their economies grow as the marginal costs of firms decrease, placing them at a comparative advantage to firms in countries with poor infrastructure. Thus the gap widens between well-endowed and poorly endowed countries. Given the contribution that communication infrastructure makes to a country's economy, there is ample economic and social justification for investing in communication infrastructure.

Local experiences in South Africa also provide some valid pointers to the role that rural infrastructure can play in the economic development of resource-poor areas:

- A DBSA survey of migration patterns on the eastern seaboard shows that the majority of rural dwellers who were spatially more mobile and who decided to migrate, chose to move to the urban periphery where there was security of land and better infrastructure. The false notion that migration occurs mainly from rural to central urban areas has added to the severity of this problem, as infrastructure development has lagged behind population growth in many small towns and rural areas.
- The KwaZulu Cane Roads Development Programme is an essential element of the Small Cane Growers Development Programme in KwaZulu-Natal. The roads programme creates employment both in the agricultural sector and through road construction and maintenance. While the roads were being constructed, local small-scale farmers were already developing their fields and planting cane.

Institutional requirements for sustainable development

Reference to rural economic infrastructure normally means roads, telecommunications, electrification and irrigation, ie *hard infrastructure*. Equally important, however, are institutional and 'soft' infrastructure. Government, local councils and the private sector are all role-players in the delivery, upkeep and productive economic use of infrastructure. A lack of this *institutional infrastructure* can cause the market to fail and rural development to be retarded. Transport and communications have been singled out as the most obvious infrastructural drivers for boosting the market economy, but finding the appropriate institutional mechanisms for delivering these services in very poor, and often over- or underpopulated areas, is a serious challenge.

Rural roads

■ Defining rural roads

Defining 'rural' in the South African context has always been problematic. The best definition of 'rural roads' refers to Level 3 and Level 4 roads. The latter are roads that connect individual settlements to Level 3 (district or metro) roads, which link the towns.

■ *Finding effective institutions*

The Rural Infrastructure Investment Framework (RIIF) estimated that there is a road backlog of 130 000 km, and that 65–90 per cent of households lack adequate roads. A sum of between R6,7 billion and R11,2 billion is needed to provide rural roads throughout South Africa but this funding is unlikely to materialise, although about R150 million may be made available annually through public works programmes. To make up even a proportion of the backlog, effective institutional mechanisms will have to be developed.

- *Policy-making institutions:* The national White Paper on Transport defines the role of national government as primarily one of policy making. To promote integration between national and provincial government, the Ministerial Conference of Ministers of Transport (Mincom) has been established. Mincom has a technical support committee, COLTO (Committee of Land Transport Officials), which consists of provincial government and metropolitan government representatives. (The Department of Transport is about to start a rural transport strategy project that will deal with both roads and transport.)
- *The role of local government:* In terms of the Constitution, municipal roads are local government matters, but fall under the provincial legislative competence. Rural local authorities are now designated as municipalities and it follows that rural roads are the responsibility of local government in association with provincial government. The divisional council model in the former Cape Province is worth reconsidering, because divisional councils had borrowing powers and the financial constraints of provincial governments may make this option indispensable.
- *Provincial government responsibilities:* Rural roads have always been the responsibility of provincial governments. In the erstwhile Cape Province, provincial government tended to utilise divisional councils (now recast as district councils) as agents for constructing and maintaining rural roads. In the other provinces, provincial Departments of Transport and Works or 'Works and Roads' perform this function themselves. The developmental role of local authorities may mean that provincial governments will face the challenge of building the same kind of supportive linkages with local governments as those that national government built up with provincial governments.

■ *Neglect of rural roads*

Transport capacity in many provinces is being eroded by general fiscal pressures and the emphasis on social welfare, health and education spending. With the exception of KwaZulu-Natal and the Eastern Cape, it appears that transport budgets are generally under pressure. In contrast, international experience suggests that a developing country should, over the long term, invest 5 per cent of its GDP in roads.

■ *Lack of policy*

The absence of policy on rural roads is a cause for concern. The emphasis in government thinking has been on national roads, development corridors and urban roads. The notion of development corridors features prominently – in the provision of infrastructure, the government will promote sustainable economic development by removing constraints on latent demand in development corridors at local, provincial, national and regional levels.

This approach leaves some questions unresolved: Who should identify the 'stimulation of economic development' in an area as a priority? What would happen if local players advocated the economic development of their areas, while the national Department of Transport was unimpressed with economic prospects for the area?

The White Paper on National Transport Policy does not take a very strong stand on rural infrastructure, nor does it offer concrete proposals for financial support for provincial governments in the provision of transportation infrastructure. This amounts to very weak policy direction as far as rural roads are concerned. The main policy impetus in this regard will lie with provincial and local government, including district councils.

■ *Relationships between provincial Departments of Transport and other provincial departments*

The rural roads sector is currently disadvantaged in three ways:

- The limited financial resources of provincial governments
- The bargaining power of the provincial Departments of Transport as opposed to the heavy demands of the social services
- The White Paper on National Transport, which offers little ammunition for provincial transport departments to lobby for rural roads

■ *The relationship between provincial Departments of Transport and local government*

Maintaining some form of sustained interaction between the relevant provincial line department and local government is critical. Local authorities are 'autonomous' in the sense that they have executive and legislative authority. Furthermore, national and provincial governments have a constitutional obligation to strengthen the capacity of municipalities to manage their own affairs. Unfortunately, the Constitution gives no practical guidance on how these functions should be performed and, in some instances, confusion as to the assignment of that responsibility has caused erratic delivery of Level 4 roads in South Africa. Each provincial level of government therefore needs to bring together the local government sector in a roads forum.

■ *Transitional transport authorities*

The transport sector has made more headway at national level than the roads sector, and the latter can usefully learn from the former. The National Land Transport Transition Bill of 1999 provides an elaborate institutional framework for planning transport infrastructure. The Bill proposes, *inter alia*, that local governments become *transitional transport authorities* with a planning, implementation, management and developmental role.

The Member of the Executive Council (MEC) should ensure the coordination of the planning processes of all planning authorities in the province. The MEC should monitor the implementation of the provincial land transport policy and should assist planning authorities that lack the staff or resources to meet their responsibilities. In addition, the MEC should ensure that the transport plans are not inconsistent with land development objectives (LDOs) and IDPs.

If the Bill is passed, several key precedents will be established:

- The important role of local government
- The importance of integrated planning
- The role of MECs and provincial Departments of Transport in assisting local authorities in transport planning, and in linking transport planning with planning in other sectors

■ *Implementation of rural roads*

In many provinces, primary local government performance in the rural areas has not been impressive. There are cases, however, where rural councils or representative councils have become increasingly involved in allocating resources to rural infrastructure. In the rural roads sector, at least four different provincial approaches have evolved.

In the *Western Cape*, the emphasis has been on provincial-local government cooperation. A ‘Provcom’, consisting of representatives of provincial and local government, meets twice a year. A Provtech committee, consisting of town engineers, town planners and traffic officers of all 110 local authorities in the province, is responsible to Provcom. Six coordinating committees, which are subordinate to Provtech, have been established to deal with topics such as traffic safety, devolution and delegation of powers, public transport, transport funding, infrastructure, and coordinated and integrated planning.

In the *Northern Cape*, the Transitional Representative Councils (TRCs) in the extended stock farming areas consist largely of farmers and small rural communities. TRCs do not have executive powers, and function in a purely advisory capacity to district councils. This system enables rural areas to be represented without creating additional administrative structures. The district councils perform road maintenance functions on behalf of the provincial Department of Transport. In allocating their funds, district councils rely on the advice of the TRCs. In the context of budget cuts, TRCs have had to be innovative. Thus far, all the TRCs in the Bo-Karoo area have spent most of their money on graders for maintaining rural roads. The graders are kept at the district council offices or the Farmers’ Union offices, from where farmers can take them out on loan. This is also a demand-driven system, so that the farmers’ felt needs are dealt with expeditiously.

In the *Free State*, rural councils have developed vigorously, which is partly due to the electoral formula whereby 50 per cent of rural council members have to be farmers and 50 per cent farm workers. District councils provide staff who act as rural council town clerks. TRCs have defined their brief extremely broadly to include typically ‘municipal’ functions (such as water, sanitation and electricity for farm workers), as well as issues outside the usual ambit of local governments (such as farm schools and farm security). With the guidance of the district council officials, rural councils lobby the provincial government to improve rural roads and some rural councils have received significant capital for funding them.

In *KwaZulu-Natal*, the Department of Transport has drafted a long-term programme of rural economic development through the provision of roads. This programme, known as Carcam 2000 (Community Access Road Construction and Maintenance), includes issues such as creating jobs and promoting development multipliers and emergent contractors. The research process included institutional capacity building, and a widespread study was launched, in consultation with local communities, to prioritise community access roads in the province. The Department of Transport’s emphasis on community involvement is a major breakthrough in prioritising and budgeting for rural infrastructure. Sector-specific transport forums have

been established that include regional and local government and which advise the Minister on the declaration and closing of district roads and the registration of local roads.

■ *Accessibility and mobility*

In rural areas, accessibility (ie the provision of networks) needs to be accompanied by mobility (ie the use of the networks by vehicles, including horses, taxis, buses, cars, lorries and tractors). The KwaZulu-Natal model offers the most enterprising way forward in the planning and prioritisation of rural roads, with a great deal of progress having also been made in placing rural roads on the agenda of both provincial and local government.

■ *District councils*

The role of district councils is becoming ever more crucial and they are increasingly being expected to undertake sophisticated sectoral planning and implementation functions. They therefore need to establish some kind of sectoral reference body to express the ideas, inputs and needs of the communities. So, for example, district councils should establish district roads advisory boards, consisting of community representatives who will probably be nominated by interest groups and/or primary local authorities. These bodies should be supported by annual allocations from the provincial departments to the district councils.

Rural telecommunications

■ *Telecommunications inequality*

There is great disparity in access to telecommunications between the developed urban and predominantly underdeveloped rural areas of South Africa. Inequalities exist both between black and white communities, and between urban and rural areas. The Reconstruction and Development Programme (RDP) states that 'the aim of the South African telecommunications sector will be to provide universal, affordable access to all as rapidly as possible within a suitable and viable telecommunications system'. Moreover, the White Paper on Telecommunications recognises that telecommunications extension is particularly important in rural areas.

■ *'Leapfrogging'*

Telecommunications offers the only opportunity for a disadvantaged community to 'leapfrog' stages of development in order to catch up with advantaged communities. The extension of the telecommunications network in rural areas entails specific challenges. Although such extension is costly, the social and economic impact per line of telecommunications in underdeveloped rural areas is more dramatic than in developed areas, with much higher multiplier effects.

■ *Institutions involved in communications development*

The Department of Communications created two new institutions to manage the telecommunications sector:

- The South African Telecommunications Regulatory Authority (Satra) was created to establish and enforce rules governing the entire telecommunications sector. Broadcasting is regulated by the Independent Broadcasting Authority through a merger proposed by the

Ministry nearly two years ago. Legislation is expected to go through parliament this session.

- The Universal Services Agency (USA) was established to identify more creative and innovative methods of promoting universal service within the broad framework of development planning. It can be regarded as the 'development arm' of Satra. Its functions are to promote the goal of universal service, give policy advice and create public awareness.

Telkom is the state monopoly operator regulated by Satra. It was formed in 1991 as an autonomous company under the Companies Act and is licensed to operate the public switched telecommunications network (PSTN) exclusively for five years, ending in May 2002. If Telkom meets the delivery targets within the prescribed five years, it has the option of extending its exclusivity for a sixth year. These targets include the installation of 3 million new lines and the aim is to install 20 telephones per 100 people by the year 2000.

Telkom's brief to expand telecommunications infrastructure and promote the achievement of a universal service contains two essentially conflicting requirements. Firstly, it needs to roll out the network and keep usage affordable and, secondly, it needs to rebalance its tariffs in order to prepare for competition. This involves bringing charges in line with costs. One effect of this is that overseas calls will no longer be used to subsidise local calls, which will make the latter less affordable. Telkom's role in connecting poor and distant communities to the network should therefore be understood as a juggling act of diverse goals, which are often at odds with one another.

The two licensed cellular telephone companies, Vodacom and MTN, cover all the major towns and cities in South Africa, as well as most of the distances along the main national roads. At present, Satra is considering applications for a third cellular telephone company, as instructed by the Telecommunications Act of 1996. Since 1994, the cellular telephone market has grown at a phenomenal rate and the industry has contributed vastly to South Africa's economy in terms of fixed investment, licence fees, tax revenues and employment.

■ *Universal service*

Defining a universal service is not straightforward. South Africa's existing definition of 'universal service' is 'living within 30 minutes' travelling time of a telephone; more than 50 per cent of eligible households having a telephone; and service for 24 000 priority customers'. This definition has been overtaken by a number of others. Specifically, what has been agreed is that concepts of time need to be replaced with distances, which are easier to establish. The final outcome of the public process on defining universal services will soon be finalised by the Universal Services Agency.

It is also not clear whether the extension of telecommunications to the less privileged sectors of society is a privilege or a right. The Agency argues that it is a right (similar to, for example, housing, water and electricity). An important distinction needs to be made between universal service and universal *access*. A definition of the latter requires the provision of a telephone within reasonable reach of people or a community. In contrast, the definition of universal service delivery implies providing a dedicated service in each household.

If telecommunications is a right, then even those rural communities with little economic *raison d'être* are entitled to have telecommunications provision. On the other hand, if telecommunications extension depends on the economic viability of an area, then only certain

rural communities would enjoy the privilege. This debate can have widespread consequences for the rural development strategies of provincial governments and vice versa – these strategies can also influence the way in which the telecommunications network is extended.

■ *Socio-economic benefits*

There are real socio-economic benefits to expanding the network, for two reasons. Firstly, primary sectors such as agriculture and industry, and services such as education, health and welfare depend on telephone communication. Secondly, each additional subscriber increases the value of the entire network, because all existing subscribers can now access the newest subscriber. *The overall benefit to the system is likely to be more than the cost of subsidising the service to those sections of the population that cannot afford a telephone service.* This benefit serves as an economic justification for pouring resources into universal service.

■ *Universal Service Fund*

It is important to determine which of the newly connected households are likely to afford, maintain and use their telephones. In terms of the Telecommunications Act, a Universal Service Fund was created which will be utilised to assist needy persons with the cost of provision or the use of telecommunication services. Despite the existence of this fund, the telecommunications sector faces a difficult financial situation. Hence it is clear that, in South Africa, a basic telephone service is likely to be beyond the reach of most households for at least a generation. This means that the delivery of universal *access* (and not universal *service*) must take precedence.

■ *Licensing requirements for universal access*

The licences granted to Telkom and the cellular telephone companies prescribe that disadvantaged communities should be serviced. Telkom's licence contains a schedule of underserviced areas, with a list of about 1 600 places. The definition of 'underprivileged' remains unclear, however, and there are no criteria for deciding on the relative importance of these areas. This raises profound questions about the prioritisation of different 'underprivileged' areas, especially in relation to other aspects of social, economic and infrastructural development programmes.

The approach taken by the Agency in promoting universal access is to establish 'telecentres', which include telephone lines, computers, modems, photocopiers, printers, scanners and overhead projectors. The Agency envisages working with a range of organisations to explore various models for telecentres. This indicates an urgent need to integrate the provision of telecentres with other development programmes.

As part of their licence obligations, Vodacom and MTN have to install 22 000 and 7 500 community service telephones respectively. At present, these are being installed according to demand, so that vast geographic areas are being neglected. A further problem is the lack of coordination between Telkom and the two cellular operators. A promising initiative is that of Vodacom's installation of phone shops. Entrepreneurs are assisted with loans and technical expertise to install cellular phones in converted 'containers'. These phone shops could have a dramatic effect on the success of other development programmes, eg farm schools, community centres, cooperatives and shops.

■ *Integrating telecommunications and other developmental sectors*

The White Paper on Telecommunications states: 'Because of the fundamental importance of the telecommunications sector to national economic growth and development, planning for the sector should be closely integrated into broad economic, trade and social planning and effectively linked with other information policy initiatives.' The Universal Services Agency is expected to ensure that telecommunications components are introduced into development projects whenever their objectives can be reinforced by information flows and communication. This raises the question of the involvement of provincial and local authorities in the telecommunications sector. Provincial governments do have the right to set their own priorities for developmental issues in general and, by implication, for telecommunications.

■ *The role of local government*

Local governments – both urban and rural – have a key role in integrated planning. In terms of the Development Facilitation Act of 1995 and the Local Government Transition Act of 1994, local authorities are required to devise LDOs and to draft IDPs.

Traditionally, telecommunications in South Africa was not a priority development issue for local and provincial government as it has always been a function of national government. Furthermore, telecommunications delivery is undertaken either by Telkom (a state-owned company) or by private companies. Nevertheless, *there are strong arguments for provincial and local governments to take an interest in the way in which telecommunications are provided, especially in the more disadvantaged and remote parts of their jurisdictions*. Local and district governments are constitutionally responsible for social and economic development in their localities. Furthermore, local authorities are responsible for cultural functions such as libraries. They also tend to have their own financial base and administrative systems. At first sight, these are good reasons for considering local authorities as 'host institutions' for telecentres, for example.

Practically, however, it appears that policy makers in the telecommunications and rural roads sectors have not conceptualised their efforts to achieve universal access as part of broad-based, multisectoral developmental strategies. This is particularly unfortunate, given the enormous impact which telecommunications and roads would have on the delivery of other types of service. Planning for telecommunications and rural roads needs to be included in local, district and provincial plans. The availability of telephone, fax and computer-based communication systems makes local emergent businesses much more viable, especially in the rural areas. *Designing economic development programmes without reference to telecommunications and roads would be seriously short-sighted.*

Developmental 'one-stop' rural local government

The urgency of rural development issues has been recognised since the publication of the Rural Development Framework (RDF), which gave local government great prominence. The existing system of district or regional government, alongside primary rural councils in some provinces, was taken as a point of departure. A significant degree of provincial diversity is present in the current system of rural local government: While the whole of South Africa falls under either metropolitan or district councils (so-called 'wall-to-wall' local government), many areas do not have primary rural councils. In some provinces, therefore, there is only one tier of rural local government – the district or regional councils. In other provinces, one of two types of primary rural local government has also been introduced:

- Transitional Representative Councils, which are a kind of subdivision of district councils. TRCs enable rural communities to interact with a structure closer to them. They function in a purely advisory capacity to district councils.
- Transitional Rural Councils, which are more ambitious bodies and enjoy the same formal powers as TLCs in urban areas. Owing to their lack of a rates base, however, they are totally dependent on funding from district councils, which also provide their executive capacity.

The role of district councils

The success of rural local government has depended greatly on the resourcefulness of district councils in promoting rural councils politically, financially and administratively. The White Paper on Local Government envisages a very important role for district councils, as they are strategically located to undertake *regional infrastructural planning*. The White Paper is not dogmatic about the nature of district councils in future and recognises that their powers may vary in different parts of the country, especially vis-à-vis primary local government.

Towards integrated development planning?

According to the national White Paper on Transport, coordinated and integrated planning and decision making and ‘assurance of modal, spatial, institutional and planning integration is critical to transportation policy’. The White Paper suggests that structures should be established at all levels of government to facilitate the integrated planning of infrastructure, operations and land use in a coordinated manner. In the telecommunications sector, the White Paper on Telecommunications states: ‘Because of the fundamental importance of the telecommunications sector to national economic growth and development, planning for the sector should be closely integrated into broad economic, trade and social planning and effectively linked with other information policy initiatives.’

Interdepartmental integration in service delivery planning

The imperatives for economic development and integrated planning require new ways of interdepartmental cooperation. There is a growing realisation of the need for various kinds of *interdepartmental and intergovernmental cooperation*. Once effective forms of interdepartmental collaboration are established, a great variety of institutional combinations and linkages will develop.

Again, the role of local government is crucial, as *local government is the only sphere of government which has an intrinsic interest in cooperative relations between departments and other developmental institutions*. There is no substitute for local governments working to coordinate the activities of a multiplicity of line departments in local areas. The IDP processes will contribute to a culture in which line departments and other agencies will have to liaise with local government, which will integrate specific programmes with broader goals.

Innovative rural local government funding of infrastructure

Infrastructure provision and maintenance have always been key local government functions. Since 1994, these functions have become even more important, as poor and underserviced communities have been brought under the jurisdiction of local authorities. For example, rural roads until now have been regarded as a provincial responsibility but, with the introduction of

rural municipalities (whether rural councils or district councils), the argument can now be made that rural roads should be classified as 'municipal roads'. This can have far-reaching implications for the financing of rural roads. The *equitable share of nationally raised revenue* for local government, which was first advised on by the Finance and Fiscal Commission, concerns national government transfers to cover operating or recurrent costs only. The primary purpose of these transfers is to enable poor households to afford basic services. One type of transfer programme which may have implications for rural roads is the matching transfer for assisting communities to provide essential infrastructure for services that create significant positive economic spillovers for residents of other communities. The applicability of such transfers to the provision of rural roads in the future should be investigated, since rural roads very often produce spillover effects into neighbouring jurisdictions.

The need for local government capacity building

Many local authorities have no local government experience and lack key organisational skills. Many local councils have had to resolve differences in style between the newly elected councils and the inherited municipal administrations, and they may also experience strong party-political competition, which hampers their functioning. There is now a need to move beyond crisis management. The first step in each province, district and locality should be to recognise the political, administrative and financial strengths that already exist and to build on them. The second step is to design a capacity-building programme for councillors and local officials to boost the integrative planning and developmental functions which the Constitution has allocated to local authorities.

At least three potential approaches to local government capacity building present themselves:

- One of the latent strengths, which many local authorities possess, is a system of portfolios or portfolio committees. These are embryonic forms of specialisation which enable councillors to develop knowledge of and experience in specific issues. The portfolios offer the basis for a system of linkages between local authorities and line departments. This logic clearly applies to the rural roads sector, since 'municipal roads' is a local government function. The same logic could also extend to telecommunications. Even though telecommunications is not a municipal function, it has a profound effect on local development. If road provision and telecommunications infrastructure are to be integrated effectively into local projects, it would make sense for at least one councillor per council to become acquainted with telecommunications and roads issues.
- Local government could be represented on provincial sectoral committees. If rural councils were to continue to exist, their inputs in such structures would also be valuable in that rural roads could be placed squarely on the provincial agenda. (The transport planning sector in the Western Cape sets a valuable precedent.)
- A third model of capacity building is to engage sectoral managers in overseeing services which have been outsourced. Many local government functions remain the *de facto* responsibility of other service providers, such as provincial and national line departments. These managers would have to liaise with such service providers to ensure that services were provided in a way consistent with council priorities and with the local IDP. In this way, the demands of specialist provision and overall integration of different sectors would be reconciled.

Part I:

The economic rationale for rural infrastructure development

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CHAPTER 1: INTRODUCTION

1.1 Rural infrastructure and poverty

There is general agreement that infrastructure is necessary for growth and development. Rural infrastructure, in particular roads and communication, serves many economic and social purposes. Rural roads are necessary for the development of agricultural markets as they bring in production inputs and take out produce. Telephones and radio provide information on markets and save enormously on transaction costs for both farmers and small enterprises. Rural roads in the South African context, especially in the previously marginalised areas, play a vital role. They are important for agriculture as a strategy for household livelihoods and for increasing the array of livelihood choices available to very poor, spatially captured households by providing access to job opportunities, schooling, health services and shops in nearby villages and towns. Seen over the long term, roads provide escape or exit routes out of rural poverty as they give access to better education, job skills and higher household earnings. Road transport thus becomes the nexus of poverty alleviation and concomitant rural development. Roads and telephones also improve social and family networks that provide support for poor households in times of economic and social shock.

During October 1996, a round-table meeting of stakeholders at the Development Bank of Southern Africa (DBSA) concluded that the lack of secondary services supporting efficient production and marketing activities constitutes the major constraint facing emerging, traditional smallholder and subsistence farmers (both men and women). Poor roads make it highly ineffective for the private sector to provide transport for delivery of inputs, such as fertiliser, and to transport produce to the markets, especially fresh produce and bulk products such as maize. The lack of communication (eg telephones) makes it difficult for farmers to get information and to order goods (Stilwell, 1998).

Moreover, the lack of adequate commuter infrastructure prevents rural dwellers from accessing the job markets in the manufacturing industry close to towns and cities. Another aspect warranting further debate and research is that many agricultural industries are place-bound, eg mills and cotton gins, dairies and creameries, fruit packhouses and wine cellars. A lack of basic infrastructure will discourage complementary investment by the private sector in setting up these labour-intensive value-adding industries. Empirical evidence indicates that, in the case of place-bound production systems, development of supporting infrastructure leads to economic activity.

1.2 The problem to be addressed: growth, employment and redistribution

Apart from the increase in total income in the national economy, normally described as economic growth, economic development consists of a number of interrelated variables in the relationship between the composite elements of the national economy. Dreyer & Brand (1986) provide empirical evidence showing that a more equitable distribution of per capita income can lead to greater economic growth prospects than when economic growth takes place without redistribution. A more equitable distribution of per capita income will benefit agriculture, manufacturing (especially of food, clothing, leather and leather products), trade and transportation at the expense of the construction, electrical and financial sectors. Stated simply, when money is put in the hands of the poor they will spend it on food and clothing, thus benefiting agriculture and local manufacture of basic goods. These sectors in turn create more low-skilled jobs. Putting money in the pockets of the rich results in increased savings

and expenditure on imported goods, boosting the financial sector and creating jobs overseas. Putting money in the hands of the poor, with the concomitant growth prospects, will lead to increases in investment at the expense of savings, but not necessarily to an imbalance between savings and investment.

The question is: *where are the poor?* South Africa is one of the countries in the world with the most skewed distribution of income. This is both a constraint and a great challenge as there are many opportunities for structural change in the economy, leading to a more equitable redistribution of household income and the accompanying growth prospects. Poverty affects millions of people, the majority of whom are women and minors living in rural areas. An estimated 17 million people survive below the minimum poverty datum line in South Africa, and of these at least 11 million live in rural areas (ANC, 1994). Table 1 illustrates the poverty profile in South Africa.

Table 1: Distribution of poverty between rural and urban areas, 1993

	Poverty shares		Poverty rates	
	Poor	Ultra poor	Poor	Ultra poor
Rural	74,6	80,7	73,7	43,5
Urban	15,7	14,1	40,5	19,8
Metropolitan	9,8	5,3	19,7	5,8
All	100,0	100,0	52,8	28,8

Source: *RDP: key indicators of poverty in South Africa (1995)*.

Moreover, rural-urban-rural migration studies show that much of the urban poverty problem emanates from rural areas (Cross et al, 1998). Households survive on wage incomes and food production, and very few produce marketable surpluses. Younger and more skilled persons abandon their landholdings and migrate to the city peripheries seeking employment. Older people and women do not readily give up their arable landholdings and are less likely to move. The very poor are spatially captured, eg female-headed households in rural areas. The less poor are spatially more mobile. A large group of rural dwellers are landless and do not have recourse to agriculture as a household coping strategy. In a nutshell, most of the country's poor are rural dwellers hoping to survive from agriculture and wage income.

1.3 The contribution of agriculture to the economy

Although not commonly realised, agriculture makes a major contribution to the South African overall economy. It has upstream linkages on the supply side and downstream linkages on the manufacturing side (Van Seventer et al, 1992). While the relative contribution of agriculture to the country's gross domestic product (GDP) is only about 4,3 per cent, this does not reflect its importance to the economy as a whole. Rustomjee (1993) cites strong forward and backward linkages in the agricultural sector, which play a very important role in the South African economy. If one takes these linkages into account, agriculture's contribution is much larger as it creates approximately 1,6 jobs outside agriculture for every job in the sector, provides 10,5 per cent of the country's jobs and creates employment for another 16 per cent of the workforce in other sectors. The Macro-Economic Research Group (MERG, 1993), for example, reports that 'the manufacturing-agricultural complex (MAC) accounted for 402 000 jobs in 1988, or 28 per cent of the total recorded employment in manufacturing,

31 per cent of manufacturing's production, 21 per cent of its capital stock and almost a quarter of manufacturing's contribution to GDP. Moreover, the MAC accounted for 23 per cent of exports, while absorbing only 9 per cent of manufacturing's imported inputs¹.

The effect of drought shows the dramatic impact that agriculture can have on the economy. As a result of the heat wave in January 1997, the GDP growth for that year was estimated to be some 0,5 per cent lower than previously forecast, ie at around 2 per cent, down from about 2,5 per cent. It was estimated that the reduction in the maize crop on its own knocked production by around R1,5 billion or close to 0,3 per cent of GDP at 1997 prices (*Ecobulletin*, 1997). This effect can be seen in the actual decline in GDP, as shown in Table 2.

Table 2: Percentage growth in GDP, 1996–7

Sector	1996					1997				
	1	2	3	4	Year	1	2	3	4	Year
Agriculture	86,5	53	60	12,5	26	-36	-5	-0,5	0	0,5
Non-agriculture	1	2	1	3	2	3,5	4	3	3	3
Total	3,5	3,5	3	3,5	3	2	3,5	0,5	0,5	1,5

Sources: *Quarterly Bulletin*, March 1997, Reserve Bank; *Quarterly Bulletin*, March 1998, Reserve Bank.

While the non-agricultural sector performed poorly during 1996 and fairly strongly during 1997, the total percentage growth in GDP followed agriculture's poor performance and ended up at only 1,5 per cent for the year.

The contribution of small-scale farming to the economy should not be overlooked. There is evidence that, given the necessary support, small-scale farming could make a significant contribution to food security and economic growth. For example, at Phokwane in the former Lebowa in the Northern Province, average yields of maize increased from 6,5 bags per hectare to 40 bags per hectare after farmers (mostly women) were provided with training and access to inputs (Adendorf, 1992). In a study conducted in KwaZulu-Natal (Van Rooyen, 1997), the linkage to consumption expenditure was significant, as shown in Table 3.

Table 3: Income elasticities¹ of agricultural households, KwaZulu-Natal

Staple food	0,4
Other foods	0,86
Household items	0,93
Household durables	1,24
Clothing	1,27
Transport	0,89
Savings	2,61
Farm inputs	0,7
Education	0,93

Note: ¹Percentage consumption increase due to 1 per cent increase in income.

These findings are important, as they strengthen the arguments in favour of public investment in poor areas to stimulate national economic growth, create jobs and redistribute wealth. They are an indication of the strong forward and backward linkages in the economy, as evidenced in poor rural settings.

CHAPTER 2: INTERNATIONAL EXPERIENCE

2.1 Introduction

The rural economy is inextricably linked to agricultural production as the engine of growth. In many regions, especially in the developing countries with their high population densities, agriculture alone is not sufficient to sustain rural livelihoods. Migrant remittances and off-farm employment form an important part of the coping strategies of poor households. A great deal of research has been done globally on these rural systems under stress and a number of generic economic elements relating to farming systems are listed in the literature as important for production: access to land rights; access to production inputs, equipment, breeding stock and on-farm infrastructure; credit for the former; access to markets; research and extension of relevant, appropriate and improved technology; and off-farm infrastructure. Similarly, in research on rural domestic systems, access to health services, education services, concomitant social infrastructure, access to potable water and fuel sources are listed as necessary elements.

Research then focuses on the development and delivery of production technologies; rural credit systems and savings clubs; large-scale irrigation; rural water supply; bricks and mortar. In recent years, the engineering approach has been replaced by many different participatory approaches, giving development a more human face, but this does not detract from the 'delivery at all costs' objective of most developers. Basic infrastructure, such as roads and transport, communication (especially telephones) and energy, is normally assumed to be adequate, although empirical research on the impact of basic public infrastructure on the very fabric of the rural setting is sparse. A literature review reveals that very little work has been done on the impact of rural infrastructure provision. Reasons for this could be the long time lags, extremely expensive experimentation and the reliance on national statistics that are either not available or do not address microhousehold dynamics.

Some useful work on the socio-economic impact of rural infrastructure provision has been done by the World Bank in China, India, Vietnam and Bangladesh, and could provide valuable lessons for South Africa.

2.2 Differences in poverty reduction

In India, Datt & Ravallion (1997) examined the unevenness of progress of different national states over a 40-year period. The researchers found that the determinants of rural poverty reduction are

- the state's rate of technological progress in agriculture
- initial conditions related to the state's physical and human infrastructure (better roads, irrigation, schools and clinics)
- the long-run rate of economic growth in public spending on economic and social services.

The researchers found that differences in the rate of poverty reduction between the states could be attributed to highly significant variations in growth rates of farm yield per hectare (due to technological progress in agriculture). By contrast, differences in the state's historic

trend growth rate in non-agricultural output were not significant in poverty reduction, probably reflecting weak connections between urban economic growth and rural poverty reduction.

Moreover, differing initial conditions, starting with better infrastructure and human resources, saw significantly higher long-term rates of poverty reduction – differences that may reflect past public spending priorities.

2.3 Gains from infrastructure development in poor areas

Although China has seen remarkable economic growth over the last two decades, this growth is skewed towards counties with better resource endowments. In response to concerns about lagging areas, the Chinese government introduced an antipoverty programme in ‘nationally poor counties’. The aid took the form of central government-subsidised credit for public works under the county government. In a World Bank study (Jalan & Ravallion, 1996) of 131 counties targeting 44 poor-programme counties, it was found that the programme had a significant impact on living standards in the targeted areas.

A comparison suggests, however, that while the programme was successful it did nothing to improve the position of poor areas relative to other better-endowed areas. There were strong signs of divergence between the areas covered by the programme and those not. The gains were enough to prevent absolute decline, but not enough to reverse the strong underlying divergent tendencies in the rural economy between the targeted poor areas and the relatively affluent areas studied (cf Jalan & Ravallion, 1997).

2.4 Integrated nature of infrastructure provision

In empirical studies in Vietnam, Van de Walle & Gunewardena (1997) find that the average economic rate of return of irrigation investment would be at least 20 per cent. Noting the generally poor infrastructure, the authors conjecture that the lack of other infrastructure, such as roads, electricity and communications, must also machinate to reduce the impacts that can be gained from irrigation alone.

2.5 Impact of infrastructure on the income of the poor

Most case studies analyse aggregate consumption growth at the state or county level and do not discern differences between the ‘haves’ and the ‘have nots’ at the individual household and village level. In a comprehensive study in Bangladesh, Ahmed & Hossain (1990) focus on household economies and concentrate on the benefits of infrastructure, particularly for the poorest segments of the population. The study identifies, describes and measures the effects of rural infrastructure development on agricultural production, employment, income, consumption, savings and investment, and market and social development. As roads and transport are key contributors to development in rural areas, they are the primary forms of infrastructure considered.

The following are some of the main findings of this study:

- Infrastructure affects agricultural production directly through prices, diffusion of technology and use of inputs. The price paid for paddy rice is the same in all the villages, but in villages with developed infrastructure fertiliser prices are 14 per cent lower and labour costs are 12 per cent higher.
- Infrastructure development indirectly affects the composition of employment by making non-agricultural jobs more easily accessible to those persons with better skills and some assets. This leads to less use of family labour and more use of wage labour in agriculture, providing employment for those with marginal or no land.
- The most important finding of the study is the profound effect that infrastructure has on the income of the poor. Infrastructure endowment causes household income to rise by 33 per cent, income from agriculture increases by 24 per cent, income from livestock increases by 78 per cent and farm wages double, but income from business and industry only rises by 17 per cent. Most striking is the distribution of the increases – the functionally landless and the small farmers garner most of these increases, while the large landowners capture most of the smaller increases in business and industry.
- Households in developed areas spend a larger share of this incremental income on non-cereal foods, non-foods and services, generating additional rounds of economic growth.
- Infrastructure encourages savings indirectly through its positive effect on income.

All in all, infrastructure increases welfare, creates jobs, and encourages growth and redistribution.

2.6 Investments in rural infrastructure, agriculture and rapid economic growth

Public actions and investment in infrastructure have a strong effect on agriculture. In a cross-country and cross-district study in India, Brinswanger (1989) finds that density of roads has an elasticity of 0,12–0,20 for aggregate output and a strong effect on the demand for fertilisers (0,18–0,22) and tractors (0,22–0,34). Moreover, paved roads have an elasticity of 0,26 for aggregate output, 0,26 for fertiliser and 1,71 for tractor stock. Electrification is not significant at the 0,10 level.

In cross-country comparisons in Northeast Asia, Kawangoe (1997) finds that at the core of the Asian miracle the high-performing Asian economies have achieved unusually low and declining levels of income inequality while stimulating rapid economic growth. The Northeast Asian countries of Japan, China-Taiwan and South Korea achieved highly equitable income distribution at the beginning of their rapid economic growth.

Kawangoe (1997) and Hayami & Platteau (1997) note that three factors made a major contribution to the remarkable Northeast Asia success: cohesive rural communities; the post-World War II land reform programme under the Supreme Commander of the Allied Forces; and the reinvestment of funds – while the governments taxed agriculture punitively, the funds were reinvested in rural services, mainly infrastructure such as roads and irrigation, and in agricultural Green Revolution research. (In contrast, African agriculture has been taxed heavily, both directly and indirectly, but the flows have been in favour of the urban elite.) Although these three factors may not yet be in place in South Africa, the policy implications for the economy are quite clear: invest in economic infrastructure and Green Revolution research in marginalised areas while attending to land reform, human and institutional infrastructure development.

In contrast with the Asian ‘miracle’, sub-Saharan Africa has fared less well. Agricultural multipliers and, consequently, growth were found to be lower in Africa than in Asia owing to the lack of a number of factors, among them infrastructure (hard infrastructure) and strong institutions (soft infrastructure). These two factors were recognised as very important constraints (Haggblade et al, 1998).

2.7 Spatial poverty traps: do they exist?

Location can make a difference between growth and shrinkage in the living standards of otherwise identical households. A spatial poverty trap can be said to exist if a household living in an area better endowed with physical and human capital sees its standard of living rise over time while another household does not. In a study on household panel data from post-reform rural China, Jalan & Ravallion (1997) found strong evidence of spatial poverty traps. A village in a mountainous area will be negatively effected while a village on the plains will have a significantly higher growth rate. The extent of the modernisation of agriculture, farm machinery use per capita and fertiliser use per hectare has a highly significant positive impact on individual consumption growth rates, as does higher road density in the area.

No significant effect of population density, nor of having a higher portion of literate adults, was reported. The portion of the population living in urban areas also has no effect. This suggests that the effects of geographic variables tend to be either neutral or divergent, in that households have higher consumption growth rates in areas that are better endowed. This in turn suggests that these geographic characteristics – better endowments of physical and human capital – tend to increase the marginal product of own capital.

2.8 Resource endowments and agricultural development

Agricultural stagnation in sub-Saharan Africa can be contrasted with the Asian model of economic development, as noted earlier. The Asian countries achieved considerable success in expanding their agricultural sector before urban industrialisation was advanced enough to absorb large numbers of workers. In an empirical study comparing sub-Saharan Africa with Southeast Asia, Hayami & Platteau (1997) found that, in Asia, the high population density and the unfavourable land-labour ratio induced more intensive land use and modernisation of agriculture. By building better land infrastructure through terracing, land levelling and irrigation, suitable conditions were created for the introduction of modern land-saving technologies.

By contrast, the relative land abundance and low population densities associated with the highly scattered settlements in sub-Saharan Africa result in extremely high transportation and communication costs. This makes isolation and underdevelopment of rural communities inevitable. A consequence of the scattered pattern of rural settlement is a low density of road networks. African countries have a road network density of 0,01–0,11 km of road per square kilometre of land area, compared with 0,30–0,45 km in Asian countries.

Maintenance standards that are low due to limited budgets, and the fact that these are spent on emergency repairs rather than periodic maintenance, aggravate the problem. Low utilisation of roads is a further problem. The number of motorised vehicles per mile of paved road in Africa is between 9–20, while a figure of 40–50 vehicles is commonly the case in Asia. Restrictive policies, such as the reliance on parastatal truck fleets for crop transport, and limitations on private trading and interregional movement of agricultural goods, have hindered the development of private transporters and traders, thus stifling markets.

High transport costs in sub-Saharan Africa, whether due to underdeveloped and poorly maintained communication links, high costs and unreliability of transport services, or simply to long distances, are reflected in the wide difference in prices paid by consumers and those received by primary producers. The absolute margin in Africa is 55 per cent, compared with 20 per cent for Asia. Of this margin, transport and residual transaction costs make up 38,5 and 23,1 per cent respectively.

Whether it is remoteness, poor infrastructure or policy-induced factors, the exportables free-on-board price is doubled relative to the farm gate price. There is a similar price rise for importables between the port of entry and the point of consumption. A large part of the rural domestic economy is isolated from the impact of foreign trade and most African economies are thus in a semi-closed state.

The above analysis conjures up the notion of a geographic spatial poverty trap in a macroregional context.

2.9 Communications infrastructure and development

Broadly speaking, much of the international literature reviewed up to this point deals with rural infrastructure in developing areas from the transport point of view. Communication infrastructure is equally important because communication is a prerequisite for primary production for the market, and for trade, commerce and industry. Access to communication infrastructure facilitates economic growth and reduces transaction costs, thereby increasing the return on a firm's own capital. In addition, there are social benefits of improved communication. Benefits that can be expected for rural and semi-urban areas are listed below (Dennis & Lining, 1987):

Social benefits

- Response to national and personal emergencies
- Reduction of isolation in remote areas
- Provision of health and education services
- Maintenance of family ties and social safety nets

Transport and locational benefits

- Reduction of migration from rural to urban areas for developing countries
- Reduction in personal travel time
- Reduced transport costs
- Improved efficiency for freight transport
- Ordering, collection and distribution of agricultural products, with special emphasis on perishable products
- Encouragement of organisational decentralisation to remote areas

Marketing benefits

Expansion of markets and improved international competitiveness

Better marketing information to aid buying and selling

Promotion of tourism

Financial benefits

Direct cost reduction

Better financial control

Improved use of resources

In answering the question of the relationship between the supply of telephones and the GDP, many analysts have used regression analysis. The direction of causality between the two variables is uncertain, however, and attempts to resolve have so far been unsuccessful. At some stage in the development of an economy the installation of more sophisticated communication networks will be necessary, as the lack of such communication will seriously hamper further economic growth. The issue of whether telecommunications cause or merely accompany economic growth is immaterial: either way investment is required if economic growth is to be expected.

In a cross-country study of 76 countries covering a ten-year period, Heymann (1997) has found significant experimental evidence that telecommunication contributes to economic growth, especially in poor countries. His findings are as follows:

- The growth of the telephone density (number of telephones per 1 000 persons) is always greater than the per capita gross national product (GNP). The difference in favour of the telephone density is 48 per cent in the case of an economy with an average per capita income of US\$200 (1983) and 0,2 per cent in the case of an income of US\$20 000 per person per year.
- The share of a telephone in the GNP increases with decreasing per capita GNP. The contribution of a telephone to GNP amounts to US\$11 800 in the case of a per capita income of US\$100, and to US\$350 in the case of a country with a per capita income of US\$20 000. Therefore, the less developed a country, the greater the contribution of a telephone to the GNP.
- The number of calls per telephone (C/T) varies from 1 000 to 3 000 calls per year. The contribution of a telephone call to the GNP is US\$12 for 1 000 C/T or US\$4 for 3 000 C/T in the case of a country with US\$100 per capita income. In the case of a country with a per capita income of US\$20 000, the contribution of a telephone call to the GNP is US\$0,40 for 1 000 C/T or US\$0,10 for 3 000 C/T.
- In all the countries examined, the relationship between business and residential subscribers remains more or less unchanged and is therefore independent of the degree of development of the economy.

In the final analysis it can be argued that communication forms a vital part of an economy. The information age has arrived and, as the horizons of information and knowledge expand, countries well endowed with communication infrastructure see their economies grow as marginal costs of firms decrease, placing them at a comparative advantage with firms in countries with poor infrastructure endowments. Thus the gap widens between well-endowed and poorly endowed countries.

Given the contribution that communication infrastructure makes to a country's economy, there is ample economic and social justification for investing in communication infrastructure. Based on the qualitative benefits that can be derived from investing in rural infrastructure, a strong redistributive argument can be made in favour of rural communications infrastructure.

CHAPTER 3: LOCAL EXPERIENCE AND LESSONS LEARNT

3.1 Infrastructure, livelihoods and migration

A DBSA survey on the eastern seaboard provides some telling pointers. It suggests that migration decisions are based on a rational choice between access to urban opportunities and services on the one hand, and rural security through land and social networks on the other. The migration footprint is not a simple rural-urban migration pattern. The majority of spatially more mobile rural dwellers who decide to migrate choose to move to the urban periphery where there is land security and better infrastructure endowments. More than 60 per cent of mobile households' strategy for migration is one of simple accumulation – to build up resources against old age.

Migration appears to be a relatively effective strategy. In the survey, families who had moved had a per capita income of R260, which is 25 per cent higher than that of families who had not moved (R208). Migration to urban areas was not as successful, however: average per capita income in the urban informal settlements was R257, above that of deep rural areas (R175) but well below the income of rural peri-urban samples (R345) and even further below that of small farming households (R550). It can be argued that this is linked to high urban unemployment and the fact that urban livelihoods do not offer opportunities for small-scale agriculture. Conversely, the argument can be made that household income is linked to the spatial mobility of households, with households that are endowed with greater social and economic capital showing greater spatial mobility than areas with greater natural and infrastructure capital. These findings are in line with Jalan & Ravallion's (1997) findings of spatial poverty traps in China.

In determining migration decisions, jobs and infrastructure appear almost equally important and are closely followed by land. Infrastructure and employment opportunities go hand in hand and are often a trade-off against land. Areas with employment opportunities attract infrastructure delivery owing to their often dense populations. Outlying areas, which have land available, are most unlikely to have adequate infrastructure and work opportunities, and are the most difficult for cost-effective infrastructure delivery. At the same time, areas that offer all three appear to be the most dynamic and also the best off in terms of household livelihoods.

As many rural people are finding it harder to get (or keep) urban jobs, they are forced back into the land economy where services are underdeveloped. The false notion that migration occurs mainly from rural to urban areas has added to the severity of this problem, as infrastructure development has lagged behind population growth in many small towns and rural areas. The result is social disruption, as well as undue pressure on natural resources, as people try to compensate for the services they do not have.

3.2 Infrastructure and agricultural production

The KwaZulu Cane Roads Development Programme is an essential element of the Small Cane Growers Development Programme in KwaZulu-Natal. The other elements are extension services, production inputs and mechanisation. The Cane Roads Programme consists of the construction or upgrading of three categories of roads: main cane haulage roads (Hilo standard), feeder or secondary roads, and infield road. It was envisaged that the construction and/or upgrading of 2 280 km of road network in the cane-producing areas of KwaZulu-Natal

would open up approximately 22 000 hectares of land for cane production and would improve transport efficiencies. The roads programme would create employment in the agricultural sector, as well as through road construction and maintenance, emphasising labour-based technology and the support of small contractors. A further spin-off would be the effect on the environment where the infield roads would serve as soil conservation structures.

The University of Natal conducted an economic evaluation of the first phase of the programme in 1994. The evaluation concentrated on three representative mill areas: the one mill area involved the upgrading of existing road infrastructure, the second involved building new roads using the plant hire method and the third involved new roads based on labour-intensive construction.

For all three mill areas, small growers receive a higher return on resources engaged before financing (financial Net Present Value, NPV) than they contribute to the economy (economic NPV). This is because they received pool prices until 1998 and a blend between A and B pool prices thereafter. Millers, on the other hand, contribute more to the economy than they receive for their resources engaged. This is mainly because they pay income tax, which is a transfer payment. For all three mill areas, the contributions by the small growers and millers exceed the costs of construction and maintenance in economic and financial terms. The results can therefore be considered viable purely on the basis of small grower production.

Table 4 indicates the results of the original study prior to implementation and the evaluation study after implementation. At a glance it is obvious that the financial ratios compare very favourably, but the economic ratios differ substantially as a result of the savings on vehicle costs that were not included in the original project feasibility study.

Table 4: Economic and financial returns on investment in KwaZulu-Natal cane roads

Indicators	Original evaluation	Mill Area 1	Mill Area 2	Mill Area 3
Financial Internal Rate of Return	17,38%	16,14%	21,61%	12,35%
Economic Rate of Return	13,30%	28,10%	27,50%	17,80%
Financial Benefit/Cost Ratio	1,32	1,97	2,99	1,55
Economic Benefit/Cost Ratio	–	3,81	4,33	2,53

The three mill area evaluation models were subjected to yield, percentage cane adoption and B pool sucrose price sensitivity analysis, the results of which show that the economic NPVs were still positive after a 30 per cent *ceteris paribus* decrease in the individual assumptions with which the analysis experimented.

From a physical aspect it is interesting to note that while the roads were being constructed, local small-scale farmers were already developing their fields and planting cane. It was estimated that 32 per cent of the expected new cane development took place even before the new roads were constructed.

The local communities and transport operators praised the construction of the new roads, because they not only opened up access for domestic and trade purposes, but also reduced travelling time and dramatically reduced expenditure on vehicle repair and maintenance.

The implementation of the KwaZulu Cane Roads Programme has contributed significantly to the success of the Small Cane Growers Development Programme in KwaZulu-Natal. The improvement of the road network in the rural areas has opened up new areas for cane establishment and has also opened up these areas to new rural entrepreneurial opportunities by virtue of improved access. The programme has contributed significantly to the economic development of the rural people in that the economic benefits of the programme exceed the costs of the programme, and can therefore be considered to have been a sound investment decision.

CHAPTER 4: DEFINING RURAL INFRASTRUCTURE

4.1 What is rural?

The Reconstruction and Development Programme's (RDP) Rural Development Strategy (1995) argues that the historical complexities, cultural perceptions and modern needs of service delivery cannot be reduced to some easy definition of 'rural' and 'urban'. Thus rural areas are defined as those areas in South Africa which have the lowest level of services, as well as the greatest average distance to the nearest service points. They include large-scale farming areas, much of the former homelands and small municipalities which service areas that have little potential to raise sufficient taxes for meeting the costs of those services without the aid of government transfers. It could be argued that this definition cannot be applied consistently – for example, there are rural areas that do not necessarily have the lowest service level from an infrastructure point of view, yet they cannot be defined as urban. The position taken in this document, however, is consistent with the institutional definition adopted in the Rural Infrastructure Investment Framework (RIIF), which defines rural areas as those areas not serviced by a municipality (DBSA, 1995).

4.2 Infrastructure

The DBSA (1998) distinguishes between economic, social and domestic infrastructure:

- *Economic infrastructure* is the part of an economy's capital stock that produces services that facilitate economic production or serve as inputs in production (eg electricity, roads and ports). Economic infrastructure, following the World Bank, can be divided into three categories: public utilities (electricity, gas and water, telecommunications, sanitation, sewerage and solid waste disposal), public works (water catchment in dams and irrigation, and roads) and other transport subsectors (railways, seaports, airports and urban transport systems).
- *Social infrastructure* is the capital formation that aims to provide services in health, education and recreation, and has both a direct and an indirect impact on the quality of life. In a direct sense, it supports production and trade and streamlines many aspects of everyday life, such as recreation, education, health and safety. Social infrastructure also facilitates investment in human capital. This means that part of the economy's physical capital stock is used to build its stock of human capital, which in turn raises the productivity of the workforce. If the workers who have to use a given capital stock are made more productive (ie a larger output per unit of labour input is produced) by raising their skill levels, the impact on growth is similar to an increase in the supply of capital. This increases the capital-labour ratio, which allows a given number of workers to produce more per worker.
- *Domestic infrastructure* comprises services that are consumed by households, such as water, sanitation or electricity. It has both an economic and a social role. It enables people to participate in economic activity, for instance through the time saved as a result of electrification. It also promotes people's health, education, and thus their productivity, through the provision of, for instance, clean water and lighting.

Although researchers and policy makers are interested in the impact of rural infrastructure on agriculture and rural development, rural economic infrastructure is not easy to define. Normally, when developers and the research community refer to rural infrastructure they mean roads, telecommunications, electrification and irrigation, ie hard infrastructure. That is only part of the picture, however, and other elements of economic infrastructure are equally important, especially institutional and soft infrastructure. Cognitively, these belong to the definition of social infrastructure mentioned above.

Government agencies, local councils, organised agriculture, women's groups, business chambers and private sector institutions all have a meaningful role to play, not only in the delivery and upkeep of infrastructure but also in its productive economic use. A deficiency in or absence of this institutional infrastructure can cause sufficient distortions for the market to fail.

Similarly, soft infrastructure – various forms of transport (buses and trucks), finance (credit and banking), communication (post and telecommunications), input distribution (seeds, fertiliser, agricultural machinery, livestock feeds and remedies) and marketing (agricultural and other rural produce) – is also necessary for rural development.

CHAPTER 5: OVERVIEW OF THE MACROECONOMIC POLICY

5.1 Macropolicy environment: the RDP and GEAR

At the heart of the RDP has been the government's commitment to addressing the problems of poverty and the gross inequality evident in almost all aspects of South African society effectively. The government's central goal for reconstruction and development has been to meet the social and economic needs of the people and to create a strong, dynamic and balanced economy. The thrust of the RDP has been to

- create jobs that are sustainable and increase the ability of the economy to absorb new job seekers in both the formal and less formal sectors
- alleviate the poverty, low wages and extreme inequalities in wages and wealth generated by the apartheid system, meet basic needs and thus ensure that every South African has a decent living standard and economic security
- address economic imbalances and structural problems in industry, trade, commerce, mining, agriculture, finance and labour markets
- integrate into the world economy, utilising the growing home base in a manner that sustains a viable and efficient domestic manufacturing capacity, and increases the country's potential to export manufactured products.

The concept of the RDP integrates growth, development, reconstruction, redistribution and reconciliation into a unified programme. The key to this link is an infrastructural programme that will provide equitable access to modern and effective services such as electricity, water, telecommunications, transport, health, education and training. The intention of the RDP agenda has been both to meet basic needs and open up previously suppressed economic and human potential in urban and rural areas in a broad-based participatory programme.

The basic fiscal mechanisms for achieving this were to curb growth in public expenditure and redistribute budgets to meet the goals of the RDP. The debate around the RDP in 1996 tended to focus more on the job to be done than the growth aspects, and the programme was effectively shelved with the closing of the RDP Office (Standing et al, 1996). Against this background and poor growth in the GDP, trade liberalisation and integration into the global economy, a macroeconomic framework for growth, employment and redistribution (GEAR) was adopted. Key elements of this framework include

- a renewed focus on budget reform
- a fiscal deficit reduction programme
- maintenance of a competitive exchange rate
- counter-inflationary monetary policy
- a gradual relaxation of exchange controls
- further tariff reforms
- industrial tax incentives
- state asset restructuring
- expanded infrastructure investment
- labour market reforms
- a strengthened system for financing training
- encouragement of trade and investment flows in southern Africa.

In a nutshell, the government's macroeconomic policy seeks economic growth through equity, market efficiency, institutional and fiscal reform, and job creation.

A deficiency in any one of these elements will be sufficient to mar long-term growth prospects. South Africa has a long history that reflects the declining ability of the formal sector to absorb jobs. Estimates by Standing et al (1996) indicate a decline in broadly defined 'formal' employment from a labour absorption rate of 60,2 per cent in 1975 to only 39,3 per cent in 1994. Taking a narrower definition of 'formal' employment, Lighelm & Kritzinger-Van Niekerk (1990) estimated that long-term labour absorption declined from 73,6 per cent during 1965-70 to as low as 12,5 per cent during 1985-90.

The MERG recognised the rapid decline in employment in the agriculture, mining and transport sector, with hardly any increase in the manufacturing sectors. It also took cognisance of the MAC, as reported by Rustomjee (1993) and Van Seventer et al (1992), and concluded that, because of the need to expand wage employment, such findings have considerable policy significance. They underpin the declared rural development policy of the African National Congress (ANC), targeting investment in agriculture and agro-industry. Furthermore, the MERG recognised that such a policy is consistent with a macroeconomic strategy that aims at increasing the real income of the poor, since poor households have higher income elasticities of demand for commodities supplied by the MAC than do other households.

In conclusion, these arguments support the evidence of Dreyer & Brand (1987) for greater public investment in rural areas. While the RDP was intended to focus more on alleviating poverty through service delivery, GEAR seeks to bring into effect the RDP's objectives through fiscal and macroeconomic measures. These measures have tended to relegate rural development and the MAC to the backwaters of the government's policy agenda. In effect, the tables are turned and the Rural Development Strategy (DLA, 1997) now argues that rural development will contribute to the success of the government's strategy for growth, employment and redistribution by

- diversified job creation through local economic development
- redistributing government expenditure to formerly deprived areas
- an expansionary infrastructure programme for addressing service deficiencies and backlog, while delivering infrastructure and essential services cost-effectively
- social development in many fields, particularly education and health services, and through providing access to resources for improving household and national productivity
- integrating marginal rural areas where the majority of citizens have been cut off from the national economy.

This argument holds little water without the accompanying public investment in rural areas. There is no evidence of such investment in the elements of GEAR, which focuses on monetary and fiscal reform with the one exception of infrastructure investment. Infrastructure investment is now manifested through the Municipal Infrastructure Investment Framework (MIIF) where it is assumed that the MIIF will also provide for rural infrastructure. The caveat is, however, that the MIIF provides primarily for 'municipal' (meaning the provision of basic domestic services, such as roads, stormwater drains, sewage, electricity and domestic water in municipal areas) or social infrastructure as opposed to economic and institutional infrastructure. This matter will be dealt with in Part II, where modalities of infrastructure development are discussed at length.

5.2 Agricultural infrastructure

GEAR pays scant attention to agricultural infrastructure. This sentiment was echoed by the round table meeting of agricultural stakeholders held at the DBSA (Stilwell, 1998). Little empirical evidence exists in South Africa as to what contribution rural infrastructure development can make to growth, redistribution and employment. In the global case studies cited earlier, there is sufficient evidence of the positive impact of rural infrastructure endowments on growth and redistribution, and one needs to ask whether these findings can be extrapolated to the South African situation. In the Asian countries, a striking difference is the more egalitarian distribution of income experienced at the onset of the rapid, agriculturally induced growth phase. The second difference is the policy these countries follow to invest heavily in rural infrastructure and Green Revolution technology. South Africa lacks both these conditions for rapid growth so policy research into these issues is urgent.

CHAPTER 6: LESSONS LEARNT AND CONCLUSIONS REACHED

6.1 Spatially poor geographic areas in South Africa

Spatially poor rural areas are commonplace in South Africa. Areas are said to be spatially poor when their resource endowments or capital stock are inadequate for the social and economic welfare of their inhabitants and negatively influence the productivity of a household's capital. Typically, poor endowments of economic infrastructure, such as roads and telephones, and institutional infrastructure such as rural institutions, and human skills, transport and communication capture the inhabitants in spatially defined, geographic poverty traps. In South Africa, the restrictive apartheid policies of the past government were a major contributor to geographically defined spatial poverty traps for millions of marginalised households. High transportation and communication costs, whether due to underdeveloped and poorly maintained communication links or simply long distances, isolate a large part of the rural domestic economy from the impact of foreign trade and the country's mainstream economy.

Whether due to remoteness, poor infrastructure or policy-induced factors, most deep rural economies are in a semi-closed state. The very poor are recyclers; ie they consume what they produce. As there is little market development, no money comes in and there is no money to purchase production and other inputs. Opening up markets through physical and institutional infrastructure development can contribute to alleviating rural poverty in its most abject form.

There is ample social (equity) and economic (efficiency) justification for government investment in the spatially defined geographic capital of the poor. Investment in these areas will lead to greater redistribution of wealth and growth in GDP, and create more low-skilled jobs than investing in any other spatial area of the national economy. Investing in the poor boosts agriculture and agro-industry-related enterprises at the expense of the construction, electrical and financial sectors. Poor people have a higher propensity to spend on basic commodities, creating further rounds of spending and stimulating growth. Moreover, there is evidence from the successful Northeast Asian countries that a more equitable distribution of national income in itself stimulates rapid economic growth.

6.2 The inextricable link between the rural economy and agriculture as the engine of growth

The rural economy is inextricably linked to agriculture as the engine of growth. Although not often appreciated, agriculture's role in the South African economy is significant through its strong backward and forward linkages. In South Africa, the MAC accounts for one-third of the workforce outside agriculture, one-third of manufacturing output, one-fifth of capital stock, and one-quarter of manufacturing's contribution to the GDP. Moreover, the MAC accounts for 23 per cent of exports while absorbing only 9 per cent of manufacturing's imported inputs. It is in this context that the role of small-scale agriculture should not be overlooked. There is evidence that, given the right incentives and supported by adequate economic and social infrastructure, small-scale agriculture could make a significant contribution to growth, redistribution and employment.

Infrastructure affects agricultural production directly through prices, diffusion of technology and use of inputs. Infrastructure development indirectly affects the composition of employment by making non-agricultural jobs more easily accessible to those persons with better skills and some assets. This leads to less use of family labour and greater use of wage labour in agriculture, providing employment for those with marginal or no land. Infrastructure endowments have the most profound effect on the poor, where the landless and small farmers garner most of the income increases while the large landowners capture most of the smaller increases in business and industry.

There are therefore strong economic arguments for building rural infrastructure that supports productive enterprise, and equally strong ethical arguments based on historical omission. Lessons from the successful Northeast Asian countries show that they invested heavily in small-scale agriculture before industry had the capacity to absorb sufficient jobs. The Asian investments occurred in two areas: rural infrastructure and Green Revolution technology. These findings are important in strengthening the arguments in favour of public investment in spatially poor areas.

The very fabric of the rural economy, the nexus of growth, redistribution and job creation, has been found to be the adequate provision of economic and institutional infrastructure in poor rural areas. All said, infrastructure increases welfare, creates jobs and encourages growth and redistribution. Rural stakeholders are concerned that the current government policies are relegating rural areas to the backwaters by succumbing to the more vocal civic urban and labour voices. The government has argued that rural development will contribute to the success of its strategy for GEAR. This argument holds little water without the concomitant public investment in rural areas. There is no evidence of this in any of the elements of GEAR, which focuses on monetary and fiscal reform, with the exception of infrastructure investment through the MIIF. The caveat is, however, that the MIIF primarily provides for 'municipal' or social infrastructure as opposed to economic and institutional infrastructure. In the final analysis, rural development needs GEAR and GEAR needs rural development.

Part II:

Institutional requirements for sustainable development

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CHAPTER 7: INTRODUCTION

7.1 Finding the appropriate institutional mechanisms

Transport and communications have been singled out as the most obvious infrastructural drivers in boosting the market economy. Rural entrepreneurs who are in touch with product, input and financial markets, can invest resources in rural areas more profitably, thereby promoting their livelihoods. Furthermore, roads and telecommunications enable communities to access social services, training opportunities, non-governmental organisations and donors.

Finding the appropriate institutional mechanisms to deliver these services in very poor, and often over- or underpopulated areas, is a serious challenge. Nevertheless, it is a challenge that has to be faced if South Africa is to avoid settling into permanent cleavages between modern and backward areas. Infrastructure provision and maintenance have always been a key local government function. Since 1994, this function has become even more important, as poor and underserviced communities have been brought under the jurisdiction of local authorities.

This part of the publication will argue that local governments will be important delivery agents, although they will need extensive support from national, provincial and other agencies. The requirement that local authorities draw up Integrated Development Plans (IDPs) compels them to bring novel functions into their purview. District councils already have significant capacity; this now needs to be reoriented to economic development and multisectoral planning. Chapter 8 focuses on rural roads, while Chapter 9 concentrates on telecommunications. In each case, new and innovative approaches to rural service delivery which were followed in various parts of South Africa, are described. This sets the stage for Chapter 10, which explores the institutional implications of implementing these programmes in rural areas.

CHAPTER 8: RURAL ROADS

8.1 Introduction

Rural roads have many benefits for rural development: job creation, opening up the potential of previously neglected subregions, enhancing local productivity and time-saving practices, reducing the social and economic costs of transport, creating viable local manufacturing industries in road construction and providing commuter services to places of economic and social opportunities, such as employment and schooling.

8.2 What are rural roads?

Defining ‘rural’ has always been problematic. Several options have surfaced in the South African context:

- A *spatial* definition, referring to areas with the greatest average distance to the nearest service points. This definition is useful for capturing the remote and farming areas, and also for planning road provision in places which can support the market in future, but not currently.
- An *economic* definition, referring to areas without an economic base. This definition captures small rural settlements, as well as densely populated ex-homeland areas.
- An *institutional* definition, as those areas not served by a municipality. This is the definition that has been generally used. The introduction of rural local authorities and the designation of district local authorities as ‘municipalities’ in recent legislation, however, has rendered this definition out of date.

To some extent then, ‘rural’ is in the eye of the beholder. Realistically, it will be up to each provincial government to define which areas qualify as ‘rural’. Their definitions may well differ, which is not surprising, owing to very different spatial and economic conditions in the various provinces. Furthermore, a provincial government’s definition may be influenced by the political lobbying of its communities, which define themselves as ‘rural’ and use the label to lever resources from government and other agencies. The definition of ‘rural road’ can lead to additional confusion. The road hierarchy is generally classified as follows (Table 5).

Table 5: Classification of the road network

Level 1	National road network
Level 2	Provincial roads, linking major centres, generally within a province
Level 3	District/metro level: Roads linking centres of economic activity (towns and larger rural settlements)
Level 4	Distributor road network in municipal areas; in rural areas, roads connecting individual settlements to Level 3 roads
Level 5	Access roads leading to individual stands or dwellings

Some may prefer to see three types of road at national/provincial level, three types at local authority level and three types at district council level. ‘If we don’t classify in threes we lead

to all sorts of problems of definition' (Dr Malcolm Mitchell, recently retired Deputy Director-General of Transport). The five-level categorisation is, however, still valid, as it seems to be the 'received wisdom'. Level 4 roads are typically characterised by the following (Schur et al, 1996: 36):

- *Length*: Less than 10 km and typically 4–5 km.
- *Traffic flow*: May currently have no internal combustion-engine-driven (open road) vehicles using it owing to poor condition, but could have appreciable pedestrian, pack animal and animal-drawn vehicle flows. Open road vehicle flows are unlikely to exceed 40 vehicles per day for basic standard links, but may reach 100 for enhanced standard links.
- *Legal status*: A public facility but not part of the formal road hierarchy.

In a sense, many Level 1 and 2 roads are also rural roads, since they pass through rural areas. Technically, however, 'rural roads' refers to Level 3 and 4 roads. One can distinguish, therefore, between 'rural roads' on the one hand and, on the other, all roads 'which pass through a rural area and may have some spin-offs on the rural environment'.

8.3 Rural Infrastructure Investment Framework

The first general needs assessment of rural infrastructure, including rural roads, was the Rural Infrastructure Investment Framework (RIIF). This report has the advantage of addressing rural roads in conjunction with other rural needs.

The RIIF (1995: 7) defines an appropriate standard for road access as the following: 'People in settlements of above 200 households should have access to the tertiary road network at least via a road designed for 40 vehicles per day, passable for all but 5 days a year'. The RIIF estimated that there is a backlog of 130 000 km of roads, and that 65–90 per cent of households lack adequate roads (*ibid*, 5–6). A sum of between R6,7 billion and R11,2 billion will be needed to provide rural roads throughout South Africa (*ibid*, 20), but this figure is unlikely to materialise. The RIIF figure came from a sampling study funded by the South African Bitumen and Tar Association and undertaken by the Council of Scientific and Industrial Research (CSIR). There is no doubt that its statistics are correct, but if those roads were to be brought into any formal network it would increase the length of the formal network in South Africa by 50 per cent. The South African fiscal system would not be able to bear this shock, and it is therefore unlikely to happen. It is more likely that about R150 million will be made available for these roads through public works programmes in the foreseeable future. Capacity needs to be built around these programmes.

Based on the RIIF, Schur et al (1996: 38) proposed a five-year programme, consisting of the following elements:

- Local communities need to contribute to the cost of providing locally needed infrastructure. Tariffs per household could be levied, either by a flat rate charged per household per month, or by a fuel levy applied to the district. The RIIF calculated a tariff of R4 per month per household for low-quality roads, and a tariff of R12 for high-quality roads.
- To meet the basic needs of local communities, a basic subsidy of not less than R600 per household should be introduced. This would amount to approximately R120 million per annum in five years (at 1995 values).

- Provision of rural access roads should be approached together with other infrastructural requirements on a local basis rather than separately.
- Maintenance should be provided for on an increasing basis, at approximately 5 per cent of the cumulative value of Level 4 roads built to that date, ie after ten years some R64,5 million per annum will be needed.
- In 20 years, this programme would deliver about 100 000 km of Level 4 roads, with a capacity to provide about 7 000 km per annum over the second ten years of the programme. During the initial ten years, 50 000 km of Level 4 roads should be upgraded at a cost of between R3,7 billion and R6,0 billion.
- The delivery of Level 4 roads should be linked to the delivery of an upgraded general road network as there is little point in concentrating on the provision of rural access roads unless higher-level roads are brought into a suitably serviceable condition. This is the responsibility of national, provincial and district authorities. *The need to assist with institutional and funding arrangements targeted at rural access road provision in coordination with the upgrading of higher-level roads must be impressed on these authorities.*
- Skills in building rural access roads should be developed. A core of directive skills could be assigned from provincial resources by a suitable geographic arrangement of road maintenance boundaries. Skills for constructing and maintaining the roads must be developed locally, however, through suitable training initiatives for which appropriate funding should be provided. This is fundamental to success, as is the creation of district roads committees.

In some provinces, these laudable goals for road delivery do not seem to have made much impression. The RIIF calculations were done at a very early stage, when other departmental policies had not yet been finalised.

To achieve even a proportion of the RIIF's targets, effective institutional mechanisms will have to be developed. The rest of this chapter explores possible institutional options.

8.4 Institutions providing rural roads

The national White Paper on Transport defines the role of the national government as primarily one of policy making. The government's role as regulator of bureaucratic detail, provider of infrastructure and transport operator will be transformed into a role with a much stronger emphasis on policy and strategy formulation, and substantive regulation. The government will emphasise strategic planning and bring together key players. The shift will affect all levels of government – local, metropolitan, provincial and national. To promote integration between national and provincial government, a coordinating structure termed the Ministerial Conference of Ministers of Transport (Mincom) has been established. Mincom has a technical support committee (Committee of Land Transport Officials, COLTO), which consists of provincial government and metropolitan government representatives. COLTO consists of several land transport coordination committees which, in turn, have their own technical subcommittees. A strong set of relationships has therefore been developed between national and provincial governments.

In terms of Schedule 5 of the Constitution, municipal roads are local government matters, but fall under the provincial legislative competence. As rural local authorities are now designated as municipalities, it follows that rural roads are the responsibility of local government in association with provincial government. It can be argued, therefore, that provincial govern-

ments face the challenge of building the same kinds of linkages with local governments as those that the national government built up with provincial governments. The same principles of cooperative governance apply.

Rural roads have always been the responsibility of provincial governments. In the erstwhile Cape Province, provincial governments have tended to utilise divisional councils (now recast as district councils) as agents for constructing and maintaining rural roads. In the other provinces, provincial Departments of Transport and Works or 'Works and Roads' perform this function themselves.

The Divisional Council model in the old Cape Province is worth reconsidering, because divisional councils had borrowing powers. The financial constraints of the provincial governments may make this option indispensable.

8.5 The neglect of rural roads

In 1996, a study of rural roads highlighted the extent of the neglect in the sector (Schur et al, 1996: 36):

- Financial resources, technical skills, planning skills and general institutional capacity have been inconsistently applied at inadequate levels and with a lack of coordination.
- Statistics on the provision of rural access roads relative to population distribution are sparse and of questionable validity. In most provinces, a proper inventory of Level 4 roads is lacking.
- Hence, the extent of the backlog is unclear and estimates of financial requirements vary between R3,5 billion and R10 billion.

Of key importance, then, is the financial and administrative capacity of provincial Departments of Roads and Transport.

A cursory overview indicates that, in many provinces, this capacity is being reduced owing to general fiscal pressures on provincial governments and the emphasis on social welfare, health and education spending. Briefly, the current scenario is the following (based on the 1999 budget speeches of the provincial MECs for Finance):

- In the *Free State*, the 1999 budget for public transport, roads and works was decreased by 32,2 per cent. This budget amounts to a mere 1,29 per cent of the total provincial budget.
- In the *Eastern Cape*, the 1999 budget for transport has increased from R176 900 000 to R195 063 000. There is a cautious reappraisal of the importance of infrastructure development and maintenance. Fifty per cent of the R59 million given to district councils through the Poverty Relief Fund has been allocated to roads. Furthermore, in addition to the funds allocated to public works, the provincial government is making R70 million available to local authorities for the improvement of roads.
- *Mpumalanga*, whose budget was reduced owing to the revision of the Equitable Share Formula, as well as to the revised census figures, will spend R528 400 000 on public works, roads and transport. This amounts to 8,8 per cent of the provincial budget.
- In the *Northern Cape*, the emphasis is clearly on social services. The budget, combining transport, agriculture, economic affairs, tourism, works and nature conservation, collectively amounts to only R267 178 000, or 11,9 per cent of the total budget.
- *Western Cape*, whose share of national revenue has been significantly reduced, had to cut

its infrastructure budget from 10,04 per cent of the provincial budget to 6,25 per cent. This affects provincial roads, nature conservation and maintenance of buildings. The transport budget was reduced from R353 209 000 to R336 613 000, which had a severe impact on rural roads. The provincial government has taken a decision that future revenue from gambling will be dedicated entirely to infrastructure and capital works.

- In the *Northern Province*, the public works and public transport budgets amount to about R25 800 000 of a total budget of R346 221 000 (ie 7,5 per cent of the budget).
- In the *North West Province*, the Department of Public Works and Roads has been allocated R580 086 000. This is a slight increase of R5 200 000. The budget speech, however, did note that, in future, the province should allocate more funding to infrastructure maintenance.
- *KwaZulu-Natal* is the only province that shows a steady increase in its transport budget although many of the other provinces have higher percentages of spending on roads. The 1999 figure of R696 041 000 represents an increase of 56,69 per cent from the previous year. Furthermore, transport is set to increase from 3,78 per cent of the provincial budget in 1999/2000, to 4,6 per cent in 2001/2.

With the exception of KwaZulu-Natal and the Eastern Cape, therefore, it appears that transport budgets are generally under pressure.

International experience suggests that a developing country should, over the long term, invest 5 per cent of its GDP in roads. One could argue that, if the total provincial budget is taken as a proxy for GDP, then 5 per cent of that should go into roads. The argument can be taken even further: Since provinces do not carry many of the expenditure items which national governments typically carry, the percentage of provincial expenditure on roads should be appreciably higher than 5 per cent.

More problematic has been the policy vacuum surrounding the issue of rural roads. The emphasis in government thinking has been primarily on national roads, development corridors and urban roads. The White Paper on National Transport Policy (Department of Transport, 1996: 4) does not take a very strong standpoint on rural infrastructure, even though it acknowledges that small-scale and subsistence farmers in many rural areas find it difficult to transport products and other commodities to and from markets. The Discussion Document on Agricultural Policy in South Africa (Ministry of Agriculture and Land Affairs, 1998) recognises that poor rural transport may constrain smallholders' access to markets by increasing transaction costs, but cautions that generalisations will be unhelpful.

Moreover, the exact status of rural infrastructure remains unclear. The following can be taken as indicators of the national government's position:

- One of the policy goals is to invest in infrastructure or transport systems in ways which satisfy social, economic or strategic investment criteria. Investments will be made after the return on such investment has been analysed. Criteria for decisions will include lifetime costs; economic, social and other returns on the investment to the country; returns to the transport system itself; and returns to the customer (Department of Transport, 1996: 6). It is not clear whether 'rural development' as such will be regarded as 'sufficient returns to the country'. Such a decision will, realistically, have to be made on agricultural grounds. If agricultural returns are positive, the roads will follow (as was the case with the KwaZulu Cane Roads Programme).

- At present, roads are a social good generally funded out of public works programmes. This does not offer a strong enough incentive to provide roads or to maintain them, since roads have to compete with other infrastructural needs for public works spending.
- The notion of development corridors features prominently. In the provision of infrastructure, the government will promote sustainable economic development by removing constraints on latent demand in development corridors at local, provincial, national and regional levels (Department of Transport, 1996: 14).
- In some cases, where transport is able to act as a leading sector in the stimulation of economic development, the government will take the lead in establishing necessary transport infrastructure and promoting the participation of other public and private sector institutions in order to boost such development. The development corridor approach, which involves national, provincial and local activities, will be adopted wherever possible.

This approach leaves some questions unresolved. Who should define the 'stimulation of economic development' in an area as a priority? What will happen if local players advocate the economic development of their areas, while the national Department of Transport is unimpressed with economic prospects for the area? Moreover, it does not actually make any difference what the national Department of Transport thinks, as it has no say over how the provinces and local players spend money on roads or how much money is allocated to them for that purpose. The national Department of Transport only has a say on Level 1 roads.

- According to the White Paper (*ibid*, 14), the mission for transport infrastructure is 'to provide an integrated, well-managed, viable and sustainable transport infrastructure meeting national and regional [southern Africa] goals into the 21st century, in order to establish a coherent base to promote accessibility and the safe, reliable, effective and efficient movement of people, goods and services'.
- Another strategic objective is to foster a sound financial base for transportation infrastructure (*ibid*, 15). Since the publication of the White Paper, the South African National Roads Agency has been established. The National Roads Act of 1998 creates an institutional network for managing, planning and funding national roads. No such equivalent legislation has been passed for provincial and lesser roads, which is left to the provincial governments' initiative and has been uneven. The one facility which the Act (Section 26) provides for local-level roads is that the National Roads Agency can, at the request of a municipality or the Premier of a province – and with the Minister's approval – perform any work in connection with any road. This can include planning, design and construction of such a road, for the account of that municipality or province. The Agency can also undertake or conduct any research or investigations and collect information in connection with roads. This function may be of assistance to provinces or local authorities.
- The White Paper does not, however, offer a concrete proposal on financial support for provincial governments in the provision of transportation infrastructure. The national Department, and hence the White Paper, have no mandate or funding for provincial roads. Other than primary economic road infrastructure, rural and intercity infrastructure 'will be the responsibility of provincial and local authorities' and 'be funded from a variety of sources' (*ibid*, 19). No details are provided in the White Paper.
- Increased attention will be given to the provision and maintenance of the lowest-order roads, both in rural and urban areas (*ibid*, 20). No further details are provided in the White Paper as to how this is envisaged.

This amounts to very weak policy direction as far as rural roads are concerned. The main impetus in this regard will lie with provincial and local government, including district councils. In putting rural roads on the agenda, two sets of institutional relationships then become significant:

- The relationship between provincial Departments of Transport and the rest of provincial government
- The relationship between provincial Departments of Transport and local government

With regard to the first relationship, the rural roads sector, in the current circumstances, is disadvantaged in at least three ways:

- The financial resources of provincial governments are limited.
- To improve the allocation to provincial roads, the provincial Departments of Transport have to be very assertive in bargaining for their 'slice of the pie' against the heavy demands of the social welfare, health and education sectors. It may be necessary, for example, to ring-fence 5 per cent of provincial budgets for roads expenditure.
- The White Paper on Transport offers little ammunition for provincial Departments of Transport to lobby for rural roads.

With regard to the second relationship, some type of sustained interaction between the relevant provincial line department and local government is clearly critical. Local authorities not only have responsibility for 'municipal roads'; they are also part of a 'sphere of government' in their own right. Local authorities are autonomous in the sense that they have executive and legislative authority, they have the right to govern the affairs of their own communities, and they are responsible for integrated social, infrastructural and economic development (Constitution, Sections 151–3). Furthermore, national and provincial governments have a positive obligation to support and strengthen the capacity of municipalities to manage their own affairs, exercise their powers and perform their functions (Section 154).

The Constitution gives no practical guidance, however, on how these functions should be performed. In some instances, confusion as to the assignment of that responsibility has caused erratic delivery of Level 4 roads in South Africa. There is no single model of delivery, nor a single institutional arrangement for addressing Level 4 roads (Schur et al, 1996: 37).

A need exists for each higher level of government to bring together its junior level in a biannual think-tank around roads. The need for this was recognised before 1994, when a forum known as a 'Function Committee for Roads' enabled intergovernmental liaison on road issues. A similar body needs to be instituted, based on a Roads Minmec Forum. The Minmec model can be replicated in each province, as a forum for the relevant MEC and district councils. (The Northern Cape Local Government Association has proposed this model.)

The lack of guidance in the national White Paper on Transport means that provincial governments have to define their approaches in practice. In the rural roads sector, three provincial approaches have evolved that are of interest not only in the actual building of roads as such, but also in the building of appropriate institutions. The last part of this chapter will provide an overview of the Western Cape, KwaZulu-Natal and Eastern Cape experiences in rural road planning and delivery. Before that, however, a brief discussion of the transport sector will be presented, as a great deal of progress has been made in this sector in carving

out a concrete role for local authorities. It can be argued that the transport sector has made more headway at national level than the roads sector, and that the latter can usefully learn from the former.

8.6 A digression: local transport

The National Land Transport Transition Bill of 1999 provides an elaborate institutional framework for planning transport infrastructure. 'Infrastructure', in relation to land transport, means fixed capital equipment and facilities in the land transport system. The proposed Act is 'transitional', because certain key pieces of non-transport legislation relating to municipalities (eg funding sources) are not in place. It is a means of transforming and restructuring the country's land transport system. The Bill proposes the following measures, *inter alia*:

Section 2(1)(f): '... in which institutions to be created in the local sphere and to be termed transport authorities, together with municipalities, are destined to play a major role.'

Section 2(1)(g): '... which entrusts the planning, implementation, management and development of the land transport systems in the areas of local communities, in accordance with national and provincial policies and frameworks, to the municipalities and transport authorities accountable to those communities, while the provinces and the national government play a facilitating, supporting, coordinating, monitoring and overseeing role.'

Several principles for land transport are outlined, including the following:

- Integrated planning, provision and regulation of infrastructure and services must take place.
- Public transport must be given higher priority than private transport.
- Investment in infrastructure and operations must be sustainable.
- Coordination of institutional functions in land transport must be promoted.
- Land transport functions must be integrated with related functions, such as land use and economic development.
- Public participation in the course of land transport planning must be encouraged..

Municipalities may become transitional transport authorities. Such authorities could be made up of one or more qualifying municipalities, which could be either a municipality with exclusive executive and legislative authority within its area of jurisdiction (presumably referring to TLCs), or a municipality with municipal executive and legislative authority in an area of jurisdiction in which there is one or more other municipalities (presumably referring to district councils). The governing body of a transport authority would consist of councillors of the participating municipalities.

A transitional transport area is constituted by agreement between the Member of the Executive Council (MEC) for Transport and the local authorities (Section 12). Participating local authorities have to specify the financial and administrative contribution that they would make to the transport authority (Section 15).

The formation of a ‘transitional transport area’ has to take into account factors such as

- dominant passenger movements
- economic interdependency of inhabitants regarding travel patterns for work, education, medical care, sport, recreation and consumer spending
- integrated land use and transport development potential
- the capacity to finance land transport infrastructure (Section 16)
- the fact that transport areas can cross provincial boundaries.

Each transport authority must

- develop land transport policies for its area, incorporating spatial development policies such as densification and development corridors
- prepare a current public transport record for the area
- prepare transport plans for the area
- carry out financial planning for transport, including infrastructure, operations, services, maintenance, monitoring and administration (Section 18)
- prepare a financial plan (Section 24).

A transport authority may

- determine fare structures for subsidised services
- make payments to public transport operators who provide public transport services in terms of subsidised service contracts and concessionary fare agreements to which it is a party
- promote integrated ticketing systems among modes of transport
- promote public participation on transport issues.

The MEC may provide funds for land transport. For example, funding made available to a province may be used to assist planning authorities in defraying the cost of transport planning for their areas (Section 25). They may also assist any transitional transport authority or municipality to make payments in terms of subsidised service contracts.

Land transport planning must be integrated with the land development process. Transport plans must be developed so as to ‘enhance the effective functioning of cities, towns and rural areas through integrated planning of transport infrastructure and facilities, transport operations including freight movement, bulk services and public transport services’ (Section 26).

Transport should be planned so as to discourage urban sprawl and to direct employment opportunities and activities, mixed land uses and high-density residential development into high-demand public transport corridors interconnected through development nodes. Transport planning should give priority to infilling and densification along public transport corridors, and should give higher priority to public transport.

This Bill requires various planning activities, including drafting integrated transport plans. These plans (Section 28) must be prepared with due regard to the relevant IDPs prepared by local authorities, and the local development objectives (LDOs) drafted in terms of the Development Facilitation Act.

The MEC must ensure the coordination of the planning processes of all planning authorities in the province (Section 35). He or she must monitor the implementation of the provincial land transport policy, and must assist planning authorities that lack the necessary staff or resources to meet their responsibilities (Section 79).

In addition, the MEC must ensure that the transport plan is consistent with LDOs and IDPs. If there are inconsistencies, and they cannot be resolved between the planning authority and the municipality, then the planning authority must refer the matter to the MEC, who will then decide the matter in consultation with the MEC responsible for land affairs.

The institutional vision for transport contained in the Bill is light years ahead of the rural roads sector. If the Bill is passed several key precedents will be established:

- The important role of local government
- The importance of integrated planning
- The role of the MEC and the provincial Departments of Transport in assisting local authorities with transport planning, and linking transport planning with planning in other sectors

There are some implications that have to be borne in mind:

- Transport planning, at the best of times, is a lengthy endeavour. Thus far, it has taken six years to get five metropolitan transport plans on the table.
- The transitional transport area Act implies vast administrative burdens for local and provincial governments.
- The emphasis on planning often assumes that the relevant political support will be forthcoming. The experience of IDPs in many towns shows the dangers of such an assumption: municipal planners and consultants have devised excellent IDPs but the political impetus for their implementation is lacking. South African local authorities do not yet have executive mayors. Although the Municipal Structures Act makes provision for this option, lengthy debates at provincial and local government level will be necessary before it is implemented.

Perhaps the way to promote the provision of rural roads is not to follow the Transitional Transport Authority route, with its massive administrative implications. The drafting of IDPs provides a sufficient basis for a locality (eg a district) to determine where additional roads are needed. Instead, the existing local authorities and, notably, the district councils, should be empowered to deal with roads issues as and when they arise. The proposals contained in Chapter 10 are aimed at empowering local authorities to have both the technical knowledge and political drive to deal with rural roads issues.

8.7 A vision without resources: the case of rural roads in the Western Cape

The Western Cape's White Paper on Transport (1997) highlights the needs of poor people in transport policy more effectively than the national White Paper. Furthermore, the needs of rural people also feature more prominently. The inherited, skewed distribution of transport infrastructure (also between urban and rural areas) is noted as a key cause for concern: 'Urban and rural systems ... often fail to meet even the most basic access requirements of the poor' (*ibid*, 5). An entire section is devoted to the relationship between transport and rural development. About 13 per cent (approximately 500 000 people) of the population of the

Western Cape live in rural areas. Most of these people are poor, living on farms and in small rural settlements that are remote from economic and social opportunities, and from essential public services such as health, welfare and education. Rural dwellers tend to rely on walking as the principal means of transport, with the concomitant safety risks on the roads.

There is a general decline in the economic performance of rural settlements throughout the province, relative to economic growth in the metropolitan area. This is exacerbated by the rapid deterioration in the quality of much of the rural road network, both surfaced and unsurfaced, which is further isolating many rural settlements and increasing rural production costs. Combined with virtually the complete absence of any form of public transport service, this discourages both investment and settlement, and inhibits the emergence of a viable economy.

Transport provision also raises important problems for rural communities. Distances to many basic services are great, making them either totally inaccessible or accessible only at high transport costs. Farm workers are often totally reliant on farmers for basic transport. *It is anticipated that transport proposals will form part of strategic approaches to development and will be endorsed by the relevant district councils.* Consideration will be given, for example, to the use of school buses for fare-paying passengers, and the use of municipal vehicles to assist small farmers in conveying goods to markets and delivering seed and fertiliser at marginal cost. Transport provision will form part of an integrated development programme, including the establishment of periodic markets.

The following principles have been adopted by the Western Cape Department of Transport:

- Maximum delegation of powers and functions
- Building capacity and capability in third-tier government structures
- Ensuring that all transport actions are development based
- Making transport part of an integrated planning process
- Reconciling minimum standards of service provision and operational performance with the need for fundamental change in the location and intensity of spatial development in both urban and rural areas – this implies that transport will be integrated into other sectoral development imperatives
- Providing a dedicated source of funding to meet provincial obligations in the provision, maintenance and operation of infrastructure and public transport services (additional funding sources must be established for use by district and local transport authorities)
- Maintenance, which is important for protecting existing investment in transport infrastructure and resources

Additional funding sources will be secured. Vehicle licence fees will be paid into a Provincial Transport Fund and become an important source of funding for the provincial Department of Transport and Public Works. Finance accruing from fines must be allocated to a provincial infrastructure fund.

The Western Cape's White Paper envisages an important role for local government, at least in the provision of transport. Metropolitan, district and local councils will be designated as transport authorities in their own right and will be required either to develop adequate competence, or to have another transport authority undertake the functions on an agency basis. The functions will be as follows:

Policy coordination

- Developing transport policies, plans and programmes based on national and provincial policies and guidelines
- Establishing and undertaking public consultation and participation
- Coordinating transport policy with national and provincial policies, and integrating with other sectoral policies such as land use

Strategic planning

- Preparing integrated land passenger transport plans, programmes and budgets
- Managing transport demand
- Undertaking financial planning
- Ensuring consistency between transport plans and programmes and broader social, economic, developmental and environmental considerations

Tactical planning

- Operating and managing the transport system to achieve optimum performance and productivity

Operational planning

- Maintaining the transport system in order to achieve optimum performance, productivity and safety through the maintenance of traffic systems
- Developing and implementing road and bridge maintenance and management programmes, primarily based on appropriate performance criteria and levels of service obtained from management systems coordinated by the provincial Department of Transport and Public Works, to ensure that the standard and quality of the road network is safeguarded.

The Western Cape provincial government has suffered severe financial cuts in its 'equitable share' of national government revenue. This has placed all services under great strain. The emphasis in allocations remains on education, health and welfare; in this context, the roads sector has been severely demoted. There is no longer even a Department of Transport; it has now been incorporated into the Department of Economic Affairs, Agriculture and Tourism.

Despite the financial constraints, the institutional networks envisaged in the Western Cape's White Paper have been established and are developing well. A 'Provcom', consisting of representatives of local government, meets twice a year. A Provtech committee is responsible to Provcom. Provtech consists of town engineers, town planners and traffic officers of all 110 local authorities in the province.

Subordinate to Provtech, six coordinating committees have been established, dealing with topics such as traffic safety, devolution and delegation of powers, public transport, transport funding, infrastructure, and coordinated and integrated planning. Each committee consists of about 20 people, drawn primarily from local government.

Through Provtech, plans are being drawn up for public transport. Once sufficient funding is available, this will include infrastructure planning. At present, the emphasis is on public transport infrastructure.³ It is possible, however, that this approach will lead to the neglect of the Karoo regions, with their low population densities.

8.8 Rural local government in the Northern Cape: road maintenance amidst financial stringency

In many provinces, the performance of primary local governments in the rural areas has not been impressive. There are cases, however, where rural councils or representative councils have become increasingly involved in allocating resources to rural infrastructure.

In the Northern Cape, the Transitional Representative Councils (TRCs) in the extended stockfarming areas consist largely of farmers, since their elections were run purely on a proportional representation basis and farmer candidates tended to sweep the board (Atkinson, 1997). There are also TRCs in small coloured communities, primarily along the Orange River. TRCs do not have executive powers, and function in a purely advisory capacity to District Councils. Nevertheless, their advice is usually taken seriously. The district councils convene the TRC meetings and guide the TRC members in working through technical issues. The system enables serious representation of rural areas, without building additional administrative structures.

The district councils perform road maintenance functions on behalf of the provincial Department of Transport. In allocating their funds, district councils rely on the advice of the TRCs, since the farmers are usually acquainted with the current condition of roads in their areas.

Rural road maintenance in the Northern Cape is becoming increasingly constrained. Road budgets have been severely cut in the province, with the result that the district councils' agency fees have been steadily reduced over the last three years. This has caused a great deal of frustration among the district councils and TRCs, especially since road maintenance in the vast arid regions is one of the most important district council functions. In the Hantam area alone, 11 631 km of untarred roads have to be maintained.

Given the financial crisis, TRCs have had to be innovative. Thus far, all the TRCs in the Bo-Karoo area have spent most of their money on graders to maintain rural roads. The graders are kept at the district council offices or at the Farmers' Union offices, from where farmers can take them out on loan. In this way the equipment is accessible to users, without district councils having to spend resources on operating it. It is also a demand-driven system, so that the farmers' felt needs are dealt with expeditiously.

8.9 Rural local governments as facilitative organisations: the case of the Free State

In the Free State, rural councils have developed more vigorously than in any other province.

³ Interview, T. Abrahamson, SJA Consultants, Cape Town, 4 March 1999.

There are two types of rural council: the ex-homeland rural councils of Phuthaditjhaba and Thaba Nchu, and the rural councils in the farming areas.

Rural councils have been remarkably successful. This is partly due to the electoral formula, whereby 50 per cent of the members have to be farmers and 50 per cent farm workers. District councils have promoted the development of rural councils very innovatively and provide staff who act as rural council town clerks. One of the key challenges was to develop working relations between farmers and farm workers, who had never before participated in social institutions on an equal basis.

Another reason for the success of the rural councils is that they have defined their brief extremely broadly. Not only do they initiate policies on typically 'municipal' functions (such as water, sanitation and electricity for farm workers), but they have also intervened in issues outside the usual ambit of local governments (such as farm schools and farm security). With the guidance of the district council officials, the rural councils take up problems with line departments. In many cases, the councils have been extremely persistent in getting their problems on the agenda of provincial and national government departments.

A third reason for the rural councils' impressive performance is that the district councils have allocated them significant sums of capital funding. This has enabled rural councils to use their capital budgets to lever resources from other agencies. In this regard, the Thaba Nchu Rural Council has undertaken a R19 million project for upgrading roads in Thaba Nchu, of which the Department of Roads and Transport will contribute R3 million (Atkinson & Ingle, 1997). The rural council also plays a key role in the steering committee which manages the project alongside representatives of the tribal authority, the district council and the Department of Roads and Transport.

8.10 A new model of rural road planning: KwaZulu-Natal

In 1995, the KwaZulu-Natal Minister of Transport guided his department to establish a long-term programme of rural economic development through the provision of roads. This programme, known as Carcam 2000 (Community Access Road Construction and Maintenance), envisaged a budget of R1 billion over a ten-year period.

Several initiatives have been taken to consolidate the roads sector. The first was to bring the responsibility for rural roads under one government department so that roads functions were no longer distributed haphazardly across numerous provincial agencies. The functions that were distributed between the national Department of Transport, the erstwhile Natal Provincial Administration and the erstwhile KwaZulu Department of Works were brought together into a single Department of Transport. This has enabled effective roads planning and a consistent approach to the involvement of local tiers of government in roads issues.

A widespread study was launched to prioritise community access roads in the province (KwaZulu-Natal Department of Transport, 1997), both for the province as a whole and at a local level, in consultation with local communities. The Department is committed to a programme of roads for rural development that is designed to end the physical, social and economic isolation of rural populations.

The research steering committee constantly emphasised that the approach is one of rural development, and that roads need to be designed as a means of generating and retaining wealth for rural communities. Issues such as job creation, and promoting development multipliers and emergent contractors, are intrinsic parts of the programme.

The Department's policy is that roads should be built only if they can be maintained. A single wet season can leave a gravel road impassable if it is not maintained.

The research process included institutional capacity building undertaken by Community Organisation Research and Development (CORD). The document argued that road transport forums (road infrastructure) should be established alongside the transport forums for passenger transport which already exist in many areas. An intensive consultation process ensued, whereby liaison systems were set up with communities and tribal authorities.

An impressive analytical model has been created whereby community access roads are planned according to local census populations, the developmental potential of districts, the existing level of human development and the extent of the existing proclaimed road network.

The KwaZulu-Natal approach dovetails with our emphasis on 'rural' as a spatial concept. One should therefore not only look at where people are currently travelling as their current travel patterns may be very skewed by the inadequate roads system – which is precisely what we are trying to remedy. One should have a model of thinking about economic options and desirable roads systems that do not yet exist. This means that current 'population' figures may not be sufficient to highlight potential economic options.

8.10.1 Building institutions: establishing rural road transport forums

The Department of Transport's emphasis on community involvement is a major breakthrough in rural infrastructure prioritising and budgeting. Although a great deal of work has gone into establishing liaison structures, the Department's approach needs to be critically evaluated against other institutional trends.

When the Department launched its programme, it felt that 'there are no inclusive representative structures and organisational capacity in rural areas through which it could effectively channel its commitment' (KwaZulu-Natal Department of Transport, 1997: 5.2). Its frustration is not surprising. The establishment of democratic local government was delayed in that province owing to party-political conflict over the role of traditional leaders in local government. The local government election of November 1995 had to be postponed for several months. After a protracted period of argumentation, the traditional leader-dominated areas were demarcated outside the TLC and metropolitan areas, and thus they maintained their desired autonomy at the expense of large fiscal bases (Galvin, 1996).

The regional councils in KwaZulu-Natal now consist of rural representatives elected on the basis of proportional representation, interest groups of land owners/levy payers and women, TLCs and traditional authorities on an *ex officio* basis. With some regional councils comprising over 250 members, they meet only a few times a year and have effectively delegated responsibilities to executive committees. For a while after its establishment, the system generated criticism (Munro & Barnes, 1997): the high level of party-political allegiances of rural candidates, the domination of white farmers in the land owner category and the lack of organisation of women candidates meant that rural councils have taken some time to generate

developmental momentum. An additional flaw was that the proportional representation system meant that particular rural communities might not be directly represented on the rural councils.

In this context, several line departments began establishing their own sector-specific liaison mechanisms at local level. In this confusing environment, it is not surprising that the Department of Transport went ahead with the establishment of sector-specific transport forums. The Minister of Transport may divide the province into as many areas as he deems fit for the purposes of establishing rural road transport forums. The duty of these forums is to advise the Minister on the declaration and closing of district roads, and the registration of local roads. The forums can also advise the Minister on local roads for serving rural communities, which will promote local economic and social development. Twenty forums were initially established.

These forums consist of representatives of rural civil society, including tribal authorities, the business sector, taxi industry, public transport, farmers' associations, organised labour, youth, women's groups, professional bodies and other community-based organisations. Initially, local government was not included. Now, however, all forums have regional council representatives. Chapter 10 explores the issue of sectoral linkages with local government.

Forums have been provided with training programmes for organisational practices, technical information, conducting community audits, drawing up business plans, coordinating road networks with neighbouring forums and learning how to prioritise community access roads. Intensive institution building has gone into this exercise.

8.10.2 Building local economic capacity in road maintenance

The system of road maintenance adopted in KwaZulu-Natal is regarded as an ideal opportunity for creating work for emerging contractors, and for procuring goods and services on the basis of affirmative action. Various options have been considered, including the following (KwaZulu-Natal Department of Transport, 1997: 9.6):

- 'Integrated plant hire contracts' are based on the rental of plant, equipment and personnel by the Department to small contractors.
- 'Labour-based' maintenance ranges from the employment of individuals (as is the case with the 'lengthman system'), to the awarding of 'labour-only' contracts to individuals or communities.
- The 'lengthman' system is based on the appointment of an individual (lengthman) on a contract basis to maintain a section of road. He is provided with basic hand tools and supervised once a month by an overseer. Payment is usually based on a 12-day working month, which allows the contractor time to attend to other interests. This system is tried and tested in South African conditions, and has often created win-win relationships between lengthmen, trading stores and local communities.
- In the community-based approach, local roads committees take responsibility for selecting suitable candidates for employment on their projects and for administering any disciplinary action. Training of such committees is vital. This approach tends to work more effectively with rehabilitation projects than with ongoing maintenance.
- In the 'emerging contractor' approach, enterprising individuals are identified in local communities. They are also trained, and effective professional management and supervision remain crucial.

- ‘Entry-level plan’ systems involve the equipping of local contractors with basic light equipment such as tractors, rollers and water bowsers to carry out construction and maintenance.
- The Department subsidises local individuals to undertake road maintenance for their communities.

These systems all have advantages and disadvantages, but the institutional framework built up by the Department enables the options to be explored and refined.

After a great deal of work had been done in 1998 and 1999, KwaZulu-Natal went on to initiate a Community Access Roads Needs Study (CARNS). They developed a good methodology for prioritising rural access roads, followed this up with rural transport studies and is about to embark on demonstration projects. All the provinces have accepted the methodology.

8.11 From rural roads to rural transport?

Much of the planning effort outlined above addresses accessibility to networks (ie the provision of networks), but not the mobility (ie the necessity for transport of any kind, such as pedestrians, horses, taxis, buses, cars, lorries, tractors) needed for their use. This is a failing that one sees frequently: decision makers generally have access to motor cars and assume that so does everyone else, hence it is easy to forget about the question of operating cost. The subsidy required for moving buses along a road is quite frequently the same as the annual cost of providing the road amortised. This factor should always be considered in integrated planning.

Transport raises all kinds of different questions, for example, whether farm workers should live in town and commute to their workplace or farm schools, which in turn affects housing policy, etc. It also raises the question of private and public bus provision, the use of taxis, bicycles and animal transport. This, in turn, raises questions about promoting small, micro- and medium-sized enterprises (SMMEs), small capital loans, and so forth.

8.12 Conclusion: the way forward

The KwaZulu model offers the most enterprising way forward in the planning and prioritisation of rural roads. A great deal of progress has also been made in placing rural roads on the agenda of both provincial and local government. In the final chapter, additional measures for strengthening local government in its constitutional function of promoting local development are considered.

In all these cases, district councils have played an important role. Increasingly, they are expected to undertake sophisticated sectoral planning and implementation functions, notably for the Department of Water Affairs and Forestry, Department of Tourism and Department of Economic Affairs. In each sectoral case, the district council should have some kind of sectoral reference body to express the ideas, inputs and needs of the communities. So, for example, district councils should establish district roads advisory boards which should consist of community representatives, probably nominated by interest groups and/or primary local authorities. This must be supported by annual allocations by the provincial departments to the district councils.

CHAPTER 9: RURAL TELECOMMUNICATIONS

9.1 The importance of telecommunications in development

Economic development depends heavily on four aspects: human resources, transportation hubs and networks, telecommunications infrastructure, and information-processing systems. The rate at which a country's telecommunications expand has become one of the most important variables influencing its rate of economic growth and development (Stavrou & Hansman, 1997). The strong relationship between telecommunications penetration and economic development is illustrated by the fact that OECD countries have 475 telephone lines per 1 000 people on average, compared with 122 lines in high-growth countries, 73 in middle-income countries and only 3 in low-income countries. In Latin America and the Caribbean, for each percentage point of growth of GDP per capita, the telecommunications infrastructure stock has grown by 1 per cent.

This strong correlation may be a causal relationship. Recent studies have found that information infrastructure stimulates economic development, as it increases the efficiency of economic, commercial and administrative activities. Information technologies can play a catalytic role in enabling the information transfer, learning and behavioural change needed to facilitate economic development. In addition, information technologies contribute to the effectiveness of the planning, management and governance needed to direct and sustain the economic development process (*ibid*, 45).

SMMEs can benefit directly from having access to telecommunications. Research in South Africa has found that almost one-fifth of SMMEs do not have a telephone, and as many as four-fifths have no fax machines or computers (*ibid*, 48). It is almost impossible to market rural products without a telephone, whether it be agricultural products, handicrafts or guest houses.

Information infrastructure as a growth stimulant only becomes effective if it is combined with other economic development programmes. Communication complements, but is not a sole contributor to, economic development. Electricity supply and roads, for example, are equally critical requirements for economic development. This illustrates the importance of integrated planning.

9.2 Towards 'universal access' to telecommunications

There is a great disparity in access to telecommunications between the developed urban and predominantly underdeveloped rural areas of South Africa (*ibid*, 48). The current level of telephone penetration in the rural areas of South Africa is less than 1 per cent, while in urban areas it is 18 per cent. There is also significant provincial inequality, with Gauteng and the Western Cape being relatively well supplied, and the Northern Cape and Northern Province lagging behind other provinces.

The White Paper on Telecommunications (1995: 1.2) recognises this technological dualism. It acknowledges that the challenge is to articulate a vision that balances the provision of basic universal service to disadvantaged rural and urban communities with the delivery of high-

level services capable of meeting the needs of a growing South African economy. 'While universal service is a global concern, it is located within a unique context in South Africa. Nowhere else does such disparity of access exist side by side with a developed communications technology sector' (ibid, 1.14).

The pressure for telecommunications delivery now comes from a variety of sectors:

- The Bill of Rights in the Constitution, which enshrines the rights of all people in South Africa with respect to the environment, health care, education and access to information, can be interpreted to mean that telecommunications services is a basic right for all citizens. Such services are essential for full participation in the community and are a basic element of the right to freedom of expression. (This argument is made, for example, in the Universal Service Agency's 'Discussion paper on definition of universal service and universal access in telecommunications'.)
- The Reconstruction and Development Programme (RDP) has accorded a high status to telecommunications owing to its developmental implications. This is true for both advanced and disadvantaged communities. Access to communications facilities is not only necessary for the delivery of services in critical sectors such as education and health, but also serves to stimulate the creation of small business. Extending communications to new and established businesses should be a key priority, as this will be most productive in creating local employment and wealth. The RDP states that 'the aim of the South African telecommunications sector will be to provide universal, affordable access to all as rapidly as possible within a suitable and viable telecommunications system'.
- The White Paper recognises that telecommunications extension is particularly important in rural areas. The apartheid system left the vast majority of black South Africans, particularly in rural communities, without access to basic communications services. 'Liberalisation trends associated with the spread of the global information highway and the legitimate needs of South African business and urban areas for advanced services could easily combine to draw interest and resources away from the delivery of service to rural and disadvantaged areas' (ibid, 1.13). Furthermore, the notion of 'leapfrogging' has been introduced: *telecommunications offers the only opportunity for a disadvantaged community to 'leapfrog' stages of development, in order to catch up with advantaged communities* (ibid, 1.4).

At the same time, the developed business sector has also pressured government to extend telecommunications in the commercial sector. The telecommunications sector cannot only concentrate on services for disadvantaged communities (as is the case, for example, in the social welfare and housing sectors); it also has to ensure that the developed sector does not lose its international competitive edge.

The delivery of telecommunications infrastructure needs to target two groups in particular. The first group can afford telecommunications, but were not previously serviced, possibly because of racial criteria. In some provinces, such as the Northern Cape, the development of communications services has lagged behind that of other infrastructure. The extent, type and location of this pent-up economically feasible demand are key variables that determine the speed with which universal service can be achieved.

The second group falls below the poverty line and cannot afford telecommunications. The long-term goal of the telecommunications sector is one of providing universal service to all South Africans. The short-term goal is private ownership for those who can afford a telephone and the provision of an affordable public telephone service within an acceptable walking distance of the homes of those who cannot afford a private telephone (Stavrou & Hansman, 1997: 5).

These categories will be examined more closely later in the report.

9.3 Special needs in rural areas

Specific challenges occur when extending the telecommunications network in rural areas. Such extension is expensive, and can cost as much as five times that of extension in an urban area. The social and economic impact per line of telecommunications in underdeveloped rural areas is, however, more dramatic than in developed areas, with much higher multiplier effects. This is due to various factors (*ibid*, 6):

- Distances are relatively great and transportation is costly and often unavailable in rural areas. The net benefit of one telephone line is therefore much greater than that of one line in an urban area.
- Unlike urban users, who make most of their calls locally, rural users often make calls to urban areas and these are typically long-distance calls. This generates more revenue for the service provider than urban-based local calls and may therefore be more profitable than urban telephones, despite high initial installation costs in the urban areas.
- Telecommunications in rural areas stimulate the place-bound income-generating sectors, such as agriculture and tourism, by opening up access to local and international markets.

Data are not readily available on the extent of telephone penetration in rural areas in the different provinces. (This may be partly due to the difficulties in defining 'rural' when compiling data.) In the Northern Cape, a telecommunications baseline study (*ibid*, 24) revealed that private telephone ownership stands at 5 per cent of coloured and 1 per cent of black households. A total of 51 per cent of all rural coloured people and 40 per cent of black people have no access to a telephone at all. The telephone technology in the Northern Cape is also inadequate owing to the preponderance of manual exchanges.

The study revealed significant pent-up demand: 43 per cent of survey respondents who live outside the Kimberley-Upington urban complexes indicated that they would install a phone immediately if the facilities were available. The extent of demand also indicated that Telkom's planned delivery of 34 000 telephones for the Northern Cape by the year 2000 would fall short by at least 17 000 lines. This study indicates the importance of research conducted by provincial governments to verify the accuracy of planning statistics utilised by Telkom.

Provincial governments also have the important role of ensuring that their rural areas appear on Telkom's priority lists. In the Northern Cape, not one single village has been listed as not having a public telephone. It is not clear, therefore, what exactly the rural needs are. Through its regional and local authorities, the Northern Cape government needs to identify those settlements lacking the service and lobby for their immediate connection (*ibid*, 36).

9.4 Policy actors

In 1996, the Department of Posts and Telecommunications was transformed into the Department of Communications. The operations of this new department are shifting towards the design of communications policies. Two new institutions were created to manage the telecommunications sector:

- The South African Telecommunications Regulatory Authority (Satra) was created to establish and enforce rules governing the entire communications sector, ie it has a regulatory function.
- The Universal Services Agency (USA) has no regulatory or enforcement power, but is established to identify more creative and innovative methods for promoting universal service within the broad framework of development planning. The USA can be regarded as the 'development arm' of Satra.

Consequently, the Regulator and the Agency require different modes of operation, as well as different sets of skills, knowledge and experience. Nevertheless, the White Paper on Telecommunications (1995: 1.16–1.18) expected the two agencies to work together on the same overall objective – the extension of access to telecommunications throughout South Africa. The two bodies report to the same Minister and are expected to develop maximum synergy so as to concentrate their resources. The functions of the Agency are to

- promote the goal of universal service
- offer guidance in providing telecommunication services as part of reconstruction and development projects
- stimulate public awareness of the benefits of telecommunication services (cf the Telecommunications Act of 1996, Section 59)
- build national consensus on the meaning of affordable and accessible universal service, appropriate to South African conditions (*ibid*, 1.22)
- establish agreement on the parameters for setting universal service priorities, such as degrees of deprivation, geography, availability of applications, institutional base, local government capacity and so on
- identify indicators of the impact of access to telecommunications services in terms of creating small businesses and employment opportunities
- highlight gaps and opportunities for the extension of infrastructure and services.

The Agency can conduct investigations, research and surveys, and make recommendations to the Minister.

This intersectoral emphasis is also reflected in the Act [Section 60(4)], which stipulates that the staff shall be appointed on the grounds of their expertise or experience in a variety of fields, including development planning, community development, social sciences, economics, telecommunications and publicity. The White Paper [par 1.22] specifies that the USA has a catalytic function, interacting and consulting with the RDP, health, education and other ministries, with regard to the progressive connection of schools and clinics. The USA can also identify projects to maximise the development impact of the telecommunications infrastructure. Crucially, also, the Agency manages the Universal Service Fund, which is discussed in more detail below.

9.5 Operators

9.5.1 Telkom

Telkom is the state operator with a five-year monopoly on the operation of the public switched telecommunications network (PSTN). Although PSTN services are generally offered through fixed wire (copper, fibre optics, etc), Telkom is offering much of its rural roll-out through DECT, which is wireless technology, and therefore strictly speaking does not only offer fixed-wire services.

Telkom installs, maintains and operates voice and non-voice telecommunications network services. In 1991 it became an autonomous company under the Companies Act, with the intention of improving the productivity and efficiency of the state's investment in this sector (Stavrou & Hansman, 1997: 11).

Telkom's five-year period of monopoly over voice telephony ends in May 2002. One of the reasons for this monopoly was to roll-out a network for expanding telephone services equitably to all citizens. It is also expected to deliver a universal service, which means that telecommunications services – especially rural telephony – should be made accessible to all South Africans. The exact meaning of 'universal service' is, however, a matter of intense debate and is discussed more fully below.

Telkom is regulated by Satra, whose six councillors are appointed by the President on the advice of the Parliamentary Portfolio Committee on Communications. Oversight of the universal service criteria, prescribed by Satra, falls under the USA.

Currently, Telkom has over 4,5 million lines, including 127 000 payphones. The average telephone teledensity (ie main telephone services per 100 people) stands at 10,05 per 100 people. In South Africa, there are 8,7 million households, of which 2,8 million have a telephone. This differs widely between racial groups: white households generally exceed 85 per cent, Asian households about 74 per cent, coloured households 37 per cent and black households 14 per cent.

By the year 2003, Telkom hopes to complete an ambitious restructuring programme. Furthermore, it is obliged to install 3 million new lines over its five-year exclusivity period, as well as convert a further 1,2 million analogue lines (outdated technology) onto digital switching equipment. The aim is to install 20 telephones per 100 people by the year 2000, although this depends on effective demand and affordability (White Paper, 1995: 2.10). By the year 2002, 62 per cent of all households, compared with the current 32 per cent, would be connected to the telephone network (Stavrou & Mkhize, 1998: 16).

Special targets will be set for the following:

- New exchange lines
- About 24 000 'priority' customers, such as hospitals, schools, libraries, local authorities and post offices – Telkom will not charge a connection fee to priority customers
- Villages with communities of between 100 and 2 000 people
- About 120 000 payphones will be installed over the next five years, aimed at increasing access in rural areas to 5 phones per 1 000 people and in urban areas to 3,5 phones per 1 000 people (Stavrou & Hansman, 1997: 14).

Satra is required to monitor compliance with the licence issued to Telkom by the Minister of Communications. In terms of the licence, severe penalties will be imposed on Telkom if it has not met these targets by the end of the five-year period in May 2002.

Telkom's brief to expand telecommunications infrastructure and promote the achievement of universal service contains two essentially conflicting requirements (White Paper, 1995: 2.11). Firstly, it needs to roll out the network and keep usage affordable and, secondly, it needs to rebalance its tariffs in order to prepare for competition. This will require that Telkom bring its charges in line with costs. The effect of this is that international calls will no longer subsidise local calls, making them more expensive than at present and way out of the reach of many South Africans. Telkom's role in connecting poor and remote communities to the network should therefore be understood as a juggling act of diverse goals that are often at odds with one another. Unlike other service sectors, such as health or housing services, Telkom needs to become a profitable and sustainable company. It cannot devote all its resources to the upliftment of disadvantaged communities. This is particularly complex, as the maintenance and extension of the local loop component of telecommunications infrastructure (the basic telephony and data exchange network) are the least profitable market segment in the telecommunications sector (*ibid*, 2.18). This also explains why Telkom needs a period of exclusivity in which its resources can be diverted to infrastructure extension.

This balancing act also complicates Satra's task of regulating Telkom, as it has to distinguish between actions that facilitate the central goals of the sector in terms of reconstruction and development, and actions that will position Telkom so powerfully that it undermines eventual competitors (*ibid*, 2.20). Satra's monitoring rule is particularly powerful in regard to Telkom's monopoly status. According to the Act (Section 36(1)d), where Satra suspects that Telkom is taking steps which may give it an undue advantage over any person or organisation who may in future be granted a licence in competition with Telkom, Satra may direct Telkom to refrain from taking such actions. The debate about the further privatisation of Telkom complicates the issue even further. In 1997, Telkom brought in strategic equity partners (Southwestern Bell Communications International Inc. and Telecom Malaysia) for 30 per cent equity.

9.5.2 Cellular telephony

The two licensed cellular telephone companies, Vodacom and Mobile Telephone Networks (MTN), cover all the major towns and cities in South Africa, as well as most of the distances along the main national roads. Satra is currently evaluating applications for a third cellular telephone company, as instructed by the Telecommunications Act of 1996.

Since 1994, the South African cellular telephony market has continued to grow at a phenomenal rate. The industry has contributed vastly to South Africa's economy in terms of fixed investment, licence fees, tax revenues and employment. Together, the cellular operators have invested R7 billion in network installation. Cellular subscriber growth has far outstripped initial expectations. By March 1998, the two companies had 1,9 million subscribers representing 4 per cent of the population. The market share of Vodacom and MTN is estimated to be 56 per cent and 44 per cent respectively. This is a lucrative field, with as many as 10 million users expected by the year 2010 (USA, nd).

As part of their licence obligations, Vodacom and MTN are obliged to install a certain number of community phones and to deploy 22 000 and 7 500 community service telephones respectively.

The distribution of these phones is not always equitable. There are wide disparities, on both racial and geographic grounds, as seen in Table 6 (ibid, 8).

Table 6: Distribution of community telephones

	Percentage of urban population	Percentage of non-urban population
Black	3	1
Coloured	3	Nil
Asian	4	Nil
White	14	5

By early 1997, Vodacom had installed a total of 7 000 community phones countrywide, of which only 10 were located in the Northern Cape, and the company had no concrete plans to install any more community phones in this province (Stavrou & Hansman, 1997: 37). MTN's performance in the province was even less impressive – of the 4 900 community phones installed countrywide, not a single one was installed in the Northern Cape. This inequity seems to stem from the fact that locational spread was not mentioned as a criterion for Vodacom or MTN and, by early 1997, Satra had not yet acted on this issue.

A further problem is the lack of coordination between Telkom and the two cellular network operators. In many cases, the three parties duplicated services in certain areas, while communities nearby were still left without service (ibid, 38).

9.6 What does 'universal service' mean?

The Universal Service Agency is acutely aware that telecommunications can make a great difference to the prospects of many South Africans. As stated in its discussion paper, 'Will the amazing advances in telecommunications systems, and related information technology, only be of benefit to a minority in South Africa, increasing inequity between an "information elite" and a majority living in "information poverty"? Or will these new technologies promote information literacy throughout our country and work as an infrastructure to promote development?'

The need for extending telecommunications is clear. Defining 'universal access', however, is another matter altogether. At the International Telecommunications Union's second colloquium in December 1993, consensus was reached that there is no fixed and uniform definition. The concept may mean different things in different countries and regions, and in different contexts in each country. Furthermore, the concept changes over time, as new technological options become available (ibid, 9). 'Universal access' is made more meaningful by delineating three key dimensions:

- *Geographic dimension:* Geographic availability of services (this is the policy emphasis in the majority of developing countries)
- *Distribution equity dimension:* Accessibility and affordability of telecommunications services to low-income users
- *Disability dimension:* Accessibility, usability and affordability of the service for disabled people

The standard of universal service can be measured in terms of three criteria:

- *Availability*: There should be nationwide coverage of telephone service, wherever and whenever required.
- *Accessibility*: Users should be treated alike; there should be no discrimination in terms of price, service and quality, irrespective of location or race, gender or religion.
- *Affordability*: Telephone services should be priced so that most users can afford them.

South Africa's existing definition of 'universal service' is as follows: 'Living within 30 minutes' travelling time of a telephone; more than 50 per cent of eligible households with a telephone; and service for 24 000 priority customers' (ibid, 3). This definition has been overtaken by a number of others. Specifically, what has been agreed is that concepts of time need to be replaced with those of distances, which are easier to establish. The outcome of the public process on defining universal services is soon to be finalised by the Agency.

Formulating appropriate universal service policies is, however, no longer the relatively simple task of providing only voice communication. The recent proliferation of telecommunications-based services has complicated the issue of universal service (Stavrou & Mkhinze, 1998). The range of services now incorporates the following:

- Basic telephony services (including access to emergency services and directory inquiries)
- Advanced telephony services (such as call forwarding and call waiting)
- Faxing
- Internet access
- Multimedia kiosks
- Special services for the disabled
- Public payphones

In a situation where there is such a wide range of services, it is very difficult to reach consensus on what should constitute a 'bare essential' package, although it should be remembered that no country includes all of the above in its definition of universal service.

At a more fundamental level of debate, it is also not clear whether the extension of telecommunications to less privileged sectors of society is a privilege or a right. The Agency argues that it is a right (similar, for example, to housing, water and electricity). It follows, therefore, that the cost-benefit equation should become a secondary consideration (ibid, 4) but, owing to resource constraints, costs have to be taken into consideration.

There are real social benefits to expanding the network. This is not only because primary sectors such as agriculture and industry, and services such as education, health and welfare depend on telephone communication. It is also because each additional subscriber increases the value of the entire network, because all existing subscribers can now access the newest subscriber. The overall benefit to the system is likely to amount to more than the cost of subsidising the service to those sections of the population that cannot afford a telephone service. This benefit serves as an economic justification for pouring resources into universal service (ibid, 5).

An important distinction needs to be made between universal service as access and universal service as actual delivery of service. The access definition means that a telephone should be provided within reasonable reach of people or a community. Access could then be defined by

walking time to a public telephone. This definition usually refers to the extension of the POTS (plain old telephone service), together with a few basic services such as emergency and 0800 numbers.

In contrast, the universal service delivery definition implies providing a dedicated service in each household. Owing to the different circumstances of different users, specific customers (such as people with disabilities, schools, public libraries or poorer people) need access to different universal service levels at appropriate rates.

The most authoritative definition of universal service in South Africa is enshrined in the RDP: '[T]he aim ... of the South African telecommunications sector ... will be to provide universal, affordable access to all as rapidly as possible within a sustainable and viable telecommunications system.' This definition can be unpacked as follows (*ibid*, 7):

- A basic and affordable telephony service should be available to all South Africans who reasonably request it, regardless of where they live.
- A modern integrated telecommunications and information system, capable of enhancing, facilitating and reducing costs in education, health care, business information, public administration and rural development, needs to be developed as rapidly as possible.
- Since the RDP explicitly states that the delivery of basic services should not discriminate against people with special needs and disabilities, it follows that reasonable measures should be put in place to give such customers access to basic telephony. Literature on the classification of needy people for the purposes of telephony usually includes the following categories: low-income households; rural households; physically disabled; priority social sector, ie education and health; and public telephony.
- This implies that the current inequities in the telecommunications sector should be treated no differently to those of other sectors, such as water and electricity.

This is an immense challenge. In developed countries, the needy categories refer to a small minority that has been excluded from the system. In many developed countries, over 90 per cent of households have a telephone; furthermore, they have had over 90 years in which to achieve this penetration rate.

In South Africa, by contrast, a large number of people live in poverty, which is particularly endemic in rural areas. About 51 per cent of South African households reside in rural areas, of which 69 per cent, compared with 27 per cent in urban areas, live in poverty. (Poverty is here calculated, in March 1997 terms, as an income of less than R1 050 per month for a family of five) (*ibid*, 9).

At present, average telephone penetration (teledensity) stands at just over 9,6 telephones per 100 people in South Africa. This compares with 1,16 for Africa and 0,4 for sub-Saharan Africa. It is, however, still far behind that of the developed world (*ibid*, 12). The figure for South Africa includes business lines, which comprise 36 per cent of all telephones in the country. If business lines are removed from the equation, teledensity drops by almost 30 per cent, as Table 7 indicates (*ibid*, 13 & 16).

Table 7: Teledensity per province

Province	Teledensity (per 100 people, ie including business lines)	Teledensity: residential and farm lines only (per 100 people)	Tele-accessibility (public payphones per 1 000 people)
Western Cape	21,2	13,5	
Gauteng	21,2	12,6	1,3
KwaZulu-Natal	7,4	5,7	1,0
Free State	7,2	6,0	1,2
North West	4,7	4,0	0,6
Northern Cape	7,4	7,7	0,9
Mpumalanga	4,9	4,0	0,5
Northern Cape	4,6	3,6	0,8
Northern Province	1,9	1,7	0,3
Weighted average for South Africa ¹	9,6	6,9	-

Note: ¹Provincial figures are Telkom's 1996 breakdowns. The total figures include Telkom, Vodacom and MTN figures.

Given that the provinces with the highest teledensity rates (Gauteng and Western Cape) account for only 16 per cent of the total population, while over 35 per cent live in the Eastern Cape and Northern Province, absolute inequality in telecommunications penetration rates is much higher than indicated in the table.

The figures conceal important rural-urban differentials. For black rural households the penetration rate is 2 per cent; for black urban households the rate is 29 per cent. The rural to urban differential is therefore 1:14. About 50 per cent of black rural households do not have access to a telephone at all, whether in their own homes or in the form of payphones less than 5 km away.

Telkom's brief, as outlined above, is to extend the network substantially. The distribution of the new lines is not, however, specified. Of the 120 000 public payphones to be installed, 3 500 will be installed in rural settlements of more than 100 households each. 'Not knowing where these telephones are likely to be installed makes it difficult to ascertain the impact these and the additional residential lines are going to have, in terms of quantifying the exact number of households that would fall within a 5 km radius and have access to a phone' (ibid, 16).

To what extent will provincial government and/or local government influence the allocation of payphones? On what criteria have they been allocated?

9.7 Affordability

It is important to determine which of the newly connected households are likely to afford, maintain and use their telephone (ibid, 16).

The analysis of pent-up demand is usually the main criterion for telecommunications planning. Stavrou & Mkhize (*ibid*, 34) note that there are five main categories of potential user:

- *Group 1*: Current telecommunications users who can afford the existing prices and therefore do not require any subsidy.
- *Group 2*: Current telecommunications users who can afford the existing prices but are spatially located in such a manner that the cost of delivery exceeds what they pay. The operator requires some form of subsidy.
- *Group 3*: Current telecommunications users who cannot afford to maintain their usage. This is reflected in the high 'churn' (or default) rate which, in 1997, amounted to 16 per cent of all households with a residential connection. Such users require some form of universal service subsidy, either in the form of financial relief or the supply of customised equipment.
- *Group 4*: Potential users who can afford the existing prices but are currently not supplied with telecommunications services. They would not require a subsidy.
- *Group 5*: Potential users lacking services who cannot afford a telephone now or in the foreseeable future. These users would require a universal service subsidy, and would have to be served through a communal or public payphone network.

The possibility of subsidies is still alive in the debate about universal telecommunications access. This may well be unrealistic, as many observers believe that subsidies are unsustainable and tend to distort markets. The crucial question here is whether telephone access should be regarded as similar to basic levels of water and sanitation, which will be subsidised for the very poor by means of the Equitable Share to be received by local government. On the other hand, electricity provision is generally not regarded as a 'basic need' that should be subsidised. Whether or not telecommunications should be classified as a 'basic need' should receive much more attention in the telecommunications debates.

A Universal Service Fund was created in terms of the Telecommunications Act, and monies are paid into the Fund through universal service obligations imposed on telecommunications licensees. The Agency manages and utilises the fund, while the Regulator has oversight powers.

According to Section 66 of the Act, the Fund will be utilised for assisting needy persons with the cost of provision or use of telecommunication services. Furthermore, PSTN licensees – currently only Telkom – may be funded for the purpose of extending their services in underserved areas. The Fund's resources are derived from prescribed annual contributions by all licence holders. At present, a ministerial policy directive (*Government Gazette* 17818, 21 February 1997) on contributions to the Universal Service Fund effectively places a ceiling of R20 million on it. This can be adjusted annually for inflation by setting Telkom's contribution, which can only make up half the contribution to the Fund, at R10 million.

The Fund is therefore unable to seriously relieve the demands for affordable service in the telecommunications sector. In addition, the sector faces other challenges:

- The current subscriber base is too small to generate the level of income required for reinvestment.

- Rapid technological changes have the potential to undermine Telkom's monopoly before its five-year exclusivity period has expired, and therefore Telkom's ability to generate the necessary income from its high-priced services will be severely limited.
- The Universal Service Fund is unable to generate more than R20 million plus inflation annually, which is an insignificant amount in relation to the telecommunications needs of the country.

It is clear that in South Africa, a basic telephone service is likely to be beyond the reach of most households for at least a generation. This means that the delivery of universal access must take precedence (Stavrou & Mkhize, 1998: 19). The authors have calculated that the minimum amount a household needs to spend on telephony per month (1997) is R30. At that price, at least 44 per cent of households are unable to afford a telephone. This picture becomes even bleaker if expenditure is calculated at R70; then 60 per cent of households will be unable to afford a telephone.

Although Telkom's expansion plans envisage an additional 2,6 million lines, it can be calculated that only an additional 0,9 million households can afford to join the network. There are various options to extend the network in these circumstances, such as:

- Prepaid telephones
- Flexible billing, which would enable low-income households to choose a more affordable package. The choice is usually between high rental/low usage, or low rental/high usage.
- Call-capping, whereby a customer enters into an agreement with Telkom about an upper limit of usage per month.

9.8 Geographic allocations

The licences granted to Telkom and to the cellular telephone companies stipulate that disadvantaged communities should be serviced. The definition of 'disadvantaged' remains very loose, however. Telkom's licence (*Government Gazette*, Notice 768 of 1997, 7 May) contains a schedule of underserviced areas, with a list of about 1 600 places. There are no criteria, however, for deciding on the relative importance of these areas.

Similarly, the Vodacom and MTN licences note that underserviced areas can be defined as a town, city, township, shanty town, location, village or human settlement, as prescribed by the Postmaster-General from time to time. There is no indication of how the service operators should decide on the priority list for these areas (USA, nd: 11).

9.9 Community-based telecommunications: diverse initiatives

9.9.1 Telecentres

The approach taken by the Universal Service Agency in promoting universal access is to establish 'telecentres'. This initiative is resourced by the Universal Service Fund. Other partners in this initiative are the Council for Scientific and Industrial Research (CSIR) and the International Development and Research Centre (IDRC) in Canada.

Initially, the Agency made 100 per cent funding available for telecentres. This approach has now been changed to require a 65 per cent contribution by the organisation applying for a telecentre.⁴

A telecentre is a place to use telecommunications facilities, like a phone shop (USA, nd). The emphasis is on the extension of telephone lines to rural, peri-urban, undeveloped areas and certain sections of urban townships. *This imbalance will be prioritised according to the existing level of penetration.* The provinces and communities with the highest telephone need will be favoured, and it is hoped that the exercise will stimulate economic and social development in those areas.

Six telecentres, which cost about R250 000 each, were established with a full range of facilities, including phone lines, computers and modems, photocopiers, printers, scanners and overhead projectors. The Canadian government intends sponsoring a further 12 such centres.⁵

A new concept of a mini-telecentre, containing phones, a computer with Internet, a photocopier, printer, scanner and fax, has now emerged. This costs about R25 000 per centre. The smaller telecentres are therefore moving closer to the phone shop approach advocated by Vodacom, which specialises primarily in telephone communication.

A national training programme has been established to provide communities with the skills needed for managing the centres. Training will be provided in business management, computing and telecentre-related technical skills. Two people, one of whom must be a woman, will be trained per telecentre. Candidates must at least be able to 'read and write and be trainable'.

The Agency envisages working with a range of organisations to explore various models for telecentres. These organisations could be a Section 21 company, a trust, a community-based organisation (CBO), a non-governmental organisation (NGO), a small business or a government organisation. Prospective partners have to demonstrate what type of community involvement will take place.

The Agency lists certain criteria for the selection of a telecentre (see Stavrou & Mkhize, 1998: 58):

- It should have the potential for sustainability.
- A telecentre should be located in a disadvantaged area (low socio-economic status, rural area, informal settlement, etc) or outside the communications loop.
- The recipient community must be willing to create and sustain a telecentre or the existing community centre to incorporate a telecentre concept.
- There has to be a high level of commitment, in terms of community participation, ownership and control of the project, and management of the centre.
- There must be the potential for evolving the telecentre into a multipurpose development centre.

⁴ Interview, K Mkhize, Satra, 26 February 1999.

⁵ Interview, K Mkhize, Satra, 26 February 1999.

- The telecentre should be as all-encompassing as possible, ie available to the immediate target community and other subgroups.
- There must be an equitable gender balance of employees.

A key factor is the 'economic and social sustainability' of the telecentres. Capital or start-up funding may be provided for equipping the telecentre with telephones, a printer, fax machine, photocopier and computers. The responsibility for managing the telecentres, however, lies with the franchisees.

Satra feels that SMMEs who run telecentres should be charged a 'wholesale' telephone tariff by Telkom. This still needs to be negotiated, and telecentres continue to be charged the full rate. (In contrast, the Vodacom phone shops charge 60c a unit, which is significantly below the commercial tariff.)

At present, six telecentres have been established and 68 more have been approved. A provisional schedule (Table 8) shows the location of 62 of these telecentres.

Table 8: Location of telecentres

Province	Rural/peri-urban	Township/Informal housing	Total number	Trained operators
Northern Province	12	0	12	24
Eastern Cape	8	1	9	18
Free State	3	5	8	14
Northern Cape	0	4	4	8
Gauteng	1	3	4	8
North West	4	2	6	14
KwaZulu-Natal	6	2	8	10
Mpumalanga	5	2	7	12
Western Cape	2	2	4	6
Total	41	21	62	114

It should be noted that this breakdown does not explain how 'rural' should be defined. For instance, it is not clear whether it includes small towns or not. The Northern Cape, for example, does not get an allocation under the 'rural category', while the Northern Province does not get one under 'township'.

What is also unclear is whether provincial governments, notably those who have undertaken integrated rural development strategies (Gauteng, KwaZulu-Natal, Free State and Mpumalanga), have been able to make inputs in the distribution of these telecentres.

9.9.2 Multipurpose community centres

The International Telecommunications Union stresses the role of multipurpose community telecentres (MCTs). These centres not only offer telecommunications services, but also a range of development-related services linked to health, education, agriculture or government information services. Multipurpose community centres (MPCCs) – which can also be called community service centres or community resource centres – are intended to provide access to information, facilities, resources, training and services.

In general, it is envisaged that community involvement, ownership or control will be fundamental to an MPCC (Benjamin & Karaki, 1998). The MPCC should reflect the needs of the local stakeholders, such as representative organisations, individual residents, local authorities, business and appointed development agents, all with proven interests in the community. As discussed below, however, community involvement can be a very ambiguous issue. There is a major difference between community 'involvement', 'ownership' and 'control', and these terms have very different consequences for effective management.

Cellular telephone centres

In Bangladesh, Grameen Telecom is working to establish 68 000 village payphones using cellular technology that will provide access to over 100 million rural inhabitants. It will cost US\$450 per payphone, which is being financed by the Grameen Bank's SMME loans, and is very successful.

In South Africa, Vodacom has established many phone shops and MTN has also set up a number of community access points. The case of Vodacom will be described here to illustrate a South African approach.⁶

In terms of its community service obligations, Vodacom must install 22 000 phones over the five-year period from 1994 to June 1999. Vodacom has adopted two approaches, as set out below.

■ *Transportable phones*

About 11 000 transportable phones have been provided to various institutions, including universities and NGOs such as the Red Cross and the Hospice Association. At universities, phones are provided to lecturers for their own use, as well as for use by the community. Telephone calls from these phones are charged at a subsidised rate. This system does not always work well, as these phones can become 'personalised' by the individual concerned.

Transportable phones are allocated according to demand. Consequently, the scheme has not yet reached deep rural areas, since individuals in those areas seldom get to hear of the scheme. Furthermore, cellphones in rural areas can only be operated near highways where there is coverage.

■ *Phone shops*

In a phone shop, several phones are installed in a converted 'container' and the shop has to be fitted out by the prospective entrepreneur. The equipment was initially provided by Vodacom, but this gave rise to fraudulent practices when entrepreneurs disappeared with the equipment.

At present, there are 550 entrepreneurs with a total of about 1 000 phone shops. These persons pay for the phones (each telephone costs R4 500) and are responsible for getting their own site. Vodacom assists with a loan from Future Bank and the entrepreneur pays 20 per

⁶ Based on an interview with M Mothiba, General Manager, Vodacom.

cent of the cost of the telephones. For example, buying five phones amounts to R22 500; if the entrepreneur pays this amount, then he or she qualifies for a loan of R110 000, with which an additional 25 phones can be purchased. With these 30 phones, the entrepreneur can open at least five or six phone shops and have a spread of shops in different villages. He or she receives 33 per cent of the turnover as commission; the rest is used to service the loan. The turnover on such an amount is likely to be about R180 000 per annum, producing an income of about R60 000 for the entrepreneur.

The problem with this approach is that it only offers one-way communication. The client can only phone from the rural area and cannot receive calls. Consequently, Vodacom is considering a Beepa system, whereby clients could have their own beeper. Each homestead could have a number where people could be notified if they have messages. They could then contact the phone shop to get the messages. This system has not yet been approved by Satra.

There are some important features to the phone shop system:

- It is purely entrepreneur-driven. The initiative has to be taken by the entrepreneur; he or she has to have start-up capital and the profits belong to him or her alone. For this reason, NGOs tend to be unsuitable candidates, as they are not accustomed to acting on the profit motive or it is beyond their brief.
- There is community access to phones, but not community ownership of the phone shops.
- It focuses primarily on basic telephony. Fax machines could be added at a later stage. There is no provision, as yet, for modems, photocopiers or any of the more sophisticated forms of telecommunications due to Vodacom's belief that disadvantaged communities must start with a basic telephone service. The culture of telecommunications can only be built up gradually.

Vodacom is now giving some thought to the location of these phone shops, since they could have the effect of supporting other rural institutions. The installation of phone shops at farm schools is being investigated, which would lead to farm schools becoming similar to community centres. (A launch has been done in Senekal in the Free State.) Other potential locations are near cooperatives, Postnet outlets and shops. At such proto-community centres, more advanced telecommunications such as computers and Internet access could be contemplated. Vodacom intends negotiating with computer suppliers.

Public information terminals

Public information terminals are being established in post offices throughout the country (USA, nd: 14).

Very little research has been done on rural people's readiness to use computer and modem-based technology. One report, however, indicates that rural people may be more interested in computers and the Internet, than 'intermediate' technology such as faxes and copiers (Andersson & Pascual-Salcedo, 1998). The youth, in particular, believe that their job prospects are much greater if they know how to use computers; they also believe that job-hunting would be much easier if they had Internet information.

9.10 Community telecommunications services: the solution?

Undeniably, many benefits come from community telecommunications centres. For these initiatives to be viable on a large scale, however, at least five types of issues have to be addressed satisfactorily (USA, nd: 15):

- *Infrastructure*: Access to the telephone system (network roll-out), as well as computer equipment (many computers can be sourced from recycling)
- *Education and training*: Training the operators of these centres and the users in the systems, especially computerised and network systems
- *Information*: Arranging links to local and national information sources, and developing local information creation (eg community directories)
- *Social sustainability*: Ensuring the services are used in the local area and are responsive to social needs
- *Economic sustainability*: This is the key test to whether these centres can survive on a major scale.

Although donor-funded pilot projects have been successful, the Agency believes that models need to be developed that are self-sustaining. These models will differ, depending on the local situation, eg township or rural area. The Agency concludes, rather hopefully: 'There have already been a number of hard lessons that should be learnt – centres where the equipment has been stolen, where community tensions have closed down centres, where incompetent or fraudulent management have made centres fail. These lessons must be shared so that future centres have more chance of success' (ibid, 15).

Despite the obvious appeal of the notion of telecommunications centres, of whatever kind, there are key difficulties to be addressed. Some of these have been recognised by the Agency, as discussed below.

9.10.1 Geographic distribution

How many access points are needed to achieve universal access? How can one ensure that all communities are served and not just those in areas considered commercially favourable? (ibid, 16). The issue of geographic distribution is a vexing one, in all sectors. The basic dilemma of a rights-based approach versus an economic developmental approach has to be faced. Will all needy communities be allocated resources, regardless of where they live, or will the economic potential of their community influence allocations?

Another way of phrasing the dilemma is that a choice has to be made between demand-driven and supply-driven approaches (Stavrou & Mkhize, 1998: 59). At present, delivery is largely demand-driven. Communities apply for telecentres, which are then approved or rejected on the basis of the Agency's criteria. Local initiative, participation and control are paramount. The problem is that better-endowed, well-organised communities have a distinct advantage and that the system is unlikely to reach marginalised groups, sectors and regions. It is unlikely that the goal of ensuring an equitable spread of telephony throughout the country will be reached.

There are three complementary ways of moving towards a more supply-driven approach:

- The Universal Services Agency has the right to adopt a social entitlement approach, based on tele-needs analysis. There is an urgent need for liaison between the telecommunications suppliers. It appears, however, that negotiations between Vodacom, MTN and Telkom, to dovetail their community service operations, yielded little fruit. This may have been because Telkom saw the interventions of the cellular phone companies as a potential threat to its own operations.⁷
- A second fruitful approach would be to link telecommunications with ongoing rural strategic planning by provincial governments. Provincial governments are ultimately responsible for rural development and it is their responsibility to work out a philosophy for their provinces. A crucial question, then, is whether provincial governments have paid any attention to telecommunications. From a cursory overview, it appears that only the Northern Cape provincial government (notably the Department of Economic Affairs) has done a proper baseline study of telecommunications in that province. It will be important for the telecommunications sector to be incorporated in future provincial development strategies. Mpumalanga's Growth and Development Strategy, which is in the process of being drawn up, would be an excellent example.
- A third approach would be to link telecommunications to an established local structure such as the rural councils in the Free State, or to expand the mandate of other sectoral forums such as transport forums or health committees.

A combination of the second and third approach would also be feasible in some instances.

9.10.2 Financial viability of telecentres

Telecentres can be regarded either as businesses (which should therefore be profitable and self-sustaining) or as public services. The Agency clearly expects telecentres to be self-sustaining. This, however, conflicts not only with the rights discourse which characterises much of the Agency's *raison d'être*; it also conflicts with financial and economic realities on the ground. There is simply no evidence for believing that poor rural communities could sustain independently financed telecentres.

The financial viability of any business depends on careful market research in that locality. This, however, conflicts with the type of organisation that the Agency envisages as telecentre franchisees. NGOs, CBOs, government departments and churches tend to have little business sense and, even if it were possible to run a telecentre profitably, it would take a proficient businessperson to make it happen. It would also require sophisticated skills to undertake market research and these can only be supplied from outside the community.

A great deal depends on whether telecentres are envisaged as basic telephone centres, or whether they should provide faxes, photocopies, Internet access and e-mail. Much of the literature assumes that these broader services will be provided. See, for example, Stavrou &

⁷ Interview, Vodacom official, 24 February 1999.

Mkhize (1998: 57), who refer to 'multimedia, video, TV, radio, print, disk, information, CD-ROM, telephone access, education and training, creation and production of information'; and the USA Business Plan, which refers to 'word-processing, spreadsheets, communications, databases and the Internet'. It has been proposed that the telecentres will link up with the South African Community Radio Satellite and Information Project, which is run jointly by the National Community Radio Forum and the Centre for Democratic Communications.

At present, the Telkom telecentres are charged full phone tariffs by Telkom. Satra feels, however, that the telecentres should be provided with a subsidised or reduced rate, to enable SMME profitability. As a generalisation, one could suggest certain typical preconditions for profitable centres:

- There should be a very low rate of household telephone penetration and available payphones in the area, in order to concentrate sufficient purchasing power for the telecentre.
- Basic telephone services are relatively cheap and easy to provide. Maintaining additional equipment such as fax machines, photocopiers, computers and modems is much more problematic.
- Rural areas are often far from (POP) servers; this may make Internet usage prohibitively expensive for local users unless it is permanently subsidised.

Stavrou & Mkhize (ibid, 61) recognised this problem: 'Affordability and financial sustainability are virtues that the USA should actively pursue, but provision for operational maintenance funding will have to be developed, to ensure the continued presence of all telecentres.'

At present, telephone access is clearly neither a privilege nor a right. If it is a right, which is the view espoused in much of the telecommunications literature, then it is inappropriate to insist that telecentres should be 'sustainable' in the sense of 'financially independent'. Long-term subsidies should be considered so that even the poorest communities, where there are no business people with ready capital, could have their own telecentres. According to Satra, the issue of subsidies is currently being discussed.⁸

9.10.3 Management of telecentres

The South African telecommunications literature abounds with optimism that 'communities' can manage their own telecommunications facilities. Even Stavrou & Mkhize (ibid, 67), whose paper is generally noteworthy for its realistic assessment of practical problems, lapse into a reification of 'communities'. For example, the authors suggest that, after application for a telecentre by 'a community', the Universal Services Agency would then make contact with the proposed 'community and/or their representatives', with the aim of obtaining a list of community needs and ensuring that all available options are carefully expressed and

⁸ Interview, K Mkhize, Satra, 26 February 1999.

properly understood. The Agency would 'enter into a contractual agreement with the proposed recipient community'.

All this begs the question of who the spokespeople or representatives of a 'community' are. Communities are seldom homogenous entities with clearly recognised representatives. It is often necessary to deal with the statutory representative of a community, which tends to be the local government or, in large areas, one or two local government councillors. In their search for delivery agents, the various authors have gradually moved from the organic concept of 'the community', to CBOs and NGOs, and finally to Section 21 companies, franchisees and small businesses.

The management of telecentres, with all their sophisticated technology, has to be considered carefully. A recent study highlighted generally weak management of telecentres (Andersson & Pascual-Salcedo, 1998):

- One in four managers were unaware of the challenges of management, or were complacent about their management capacities.
- One in three managers did not know where to find help to improve the management of their telecentres.
- Very little training is available.
- Most managers do not know what their clients' needs are, or what their obstacles are in accessing the telecentres.

What is remarkable about the telecommunications literature is that local government seldom features as a potential delivery agent. Yet it is local and district government which is constitutionally responsible for social and economic development in their localities. Furthermore, local authorities are responsible for cultural functions such as libraries. It is also these types of government that have some basic administrative and financial systems. Some local authorities also have a financial base. All these are *prima facie* good reasons for considering local authorities as 'hosts' for telecentres.

Stavrou & Mkhize (*ibid*, 52) are partial exceptions, arguing for local governments and traditional authorities to be included as priority customers alongside the welfare, education and health sectors. Local authorities have to take advantage of computer systems to simplify record keeping and improve the quality of information. This is a valuable point; the local government sector itself sets special demands for extending telecommunications. A municipal communications network is urgently required whereby local authorities can communicate with one another and with line departments. As many provincial Departments of Local Government and the provincial local government associations have insufficient contact with local authorities, the latter effectively find themselves cast adrift and cannot access support when they need it. Placing local authorities on the e-mail network (and even on the automatic exchange network, in some cases) will almost immediately transform their functioning.

The authors (*ibid*, 60) also refer to the developmental role of local government: 'Enabling development at a localised or community level is to enable the power of local government – be it elected or traditional authority. Enabling local government to provide local services and to coordinate local development is critical to the creation of coherent, accountable, locally based delivery systems.' Despite these references to the importance of local government, the authors never suggest that local governments could be utilised as delivery agents for telecentres. Nor is the role of local government as a policy-making body reflected upon

further, despite the fact that local authorities are responsible for drafting integrated development plans.

9.11 Integrating telecommunications and other developmental sectors

The White Paper on Telecommunications (1995: 1.11) states: 'Because of the fundamental importance of the telecommunications sector to national economic growth and development, planning for the sector should be closely integrated into broad economic, trade and social planning and effectively linked with other information policy initiatives.'

The role of the Universal Services Agency is particularly important. It is expected to ensure that telecommunications components are introduced into development projects whenever their objectives can be reinforced by information flows and communication. To this end, the Agency will need to build close links with CBOs and development organisations in both public and private domains (*ibid*, 1.19–1.20).

The Agency acknowledges that no single organisation will be able to achieve universal access in South Africa by itself: 'A primary objective of this initiative must be to link the number of different projects so that there is a reasonable national coverage of centres. This includes links to libraries, schools (especially through the SchoolNet initiative), health clinics, churches and other community projects. Information projects should link with the work of the Government Communications and Information Service.'

This raises the question of the involvement of provincial and local authorities in the telecommunications sector. In South Africa, this sector was traditionally not a priority development issue for local and provincial government, as it has always been (and still is) a national government function. Furthermore, telecommunications delivery is undertaken either by Telkom (a state-owned company) or private companies and their activities are monitored by agencies such as Satra and the USA, and not directly by the Department of Communications itself.

It would appear that the telecommunications sector is far removed from the sphere of provincial and local government. Nevertheless, there are strong arguments for provincial and local governments to take an interest in the way telecommunications are provided, especially in the more disadvantaged and remote parts of their jurisdictions. Provincial governments have the right to set their own priorities regarding developmental issues in general and, by implication, for telecommunications. At least three provinces (KwaZulu-Natal, Gauteng and the Free State) have drafted rural development strategies. Preliminary research has indicated substantial differences in community telecommunications needs, and these should be incorporated into provincial development strategies (Andersson & Pascual-Salcedo, 1998).

The debate on whether telecommunications are a 'right' or a 'privilege' is also germane here. If telecommunications is a right, then even those rural communities with little economic *raison d'être* are entitled to have telecommunications provision. On the other hand, if telecommunications extension depends on the economic viability of an area, then only certain rural communities would enjoy the privilege. This debate could have widespread consequences for the rural development strategies of provincial governments and vice versa, as those strategies could also influence the way in which the telecommunications network is extended.

9.12 Conclusion

It appears that policy makers in the telecommunications sector have not conceptualised their efforts to achieve universal access as part of broad-based, multisectoral developmental strategies.

This is particularly unfortunate, given the enormous impact which telecommunications would have on the delivery of other types of service. Despite the fact that communications is a national line department function and is being monitored, planned and implemented by non-departmental actors (such as Satra, the USA, Telkom and cellular companies), telecommunications planning needs to be included in local, district and provincial plans. The availability of telephone, fax and computer-based communication systems makes local emergent businesses much more viable, especially in the rural areas. *Designing economic development programmes without reference to telecommunications would be seriously short-sighted.*

This argument has far-reaching institutional implications. It will bring into the foreground the multiple dynamics between national, provincial and local government; between non-state actors (such as Telkom, Vodacom and MTN) and local government; and between the telecommunications sector and a multiplicity of other sectors which have all evolved their own priorities for local development. Rural development, in particular, raises issues of inter-institutional negotiations, support and capacity building, since local institutions tend to be much weaker than those in urban areas.

The next chapter will highlight specific aspects of rural development and their institutional consequences.

Part III:

Developmental local government in rural areas

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CHAPTER 10: INSTITUTIONAL REQUIREMENTS FOR RURAL DEVELOPMENT

10.1 Rural local government: the status quo

The urgency of rural development issues has been recognised since the publication of the Rural Development Framework, in which local government was given great prominence. The existing system of district or regional government, alongside primary rural councils in some provinces, was taken as a point of departure (DLA, 1997).

A significant degree of provincial diversity has taken place in the current system of rural local government. (For a fuller description, see LAPC, 1998.) While the whole of South Africa falls under either metropolitan or district councils (so-called 'wall-to-wall local government'), many areas do not have primary rural councils. In some provinces, therefore, there is only one tier of rural local government, namely district or regional councils. In other provinces, primary rural local government has also been introduced. There are two types:

- Transitional Representative Councils, which are a kind of subdivision of district councils. These enable rural communities to interact with a structure closer to them. Transitional Representative Councils have only advisory functions to district councils.
- Transitional Rural Councils, which are more ambitious bodies and enjoy the same formal powers as Transitional Local Councils (TLCs) in urban areas. Owing to their lack of a rates base, however, they are totally dependent on funding supplied by district councils. The district councils provide their executive capacity (Motala & Polunic, 1999).

An overview of rural local government in the nine provinces is given in Table 9.

Table 9: Rural local government in the nine provinces

Province	District councils	TLCs	TRepCs/TRCs
Eastern Cape	6	94	76 + 7
Free State	4	80	15
Gauteng	2	14	9 + 10
KwaZulu-Natal	7	61	—
Mpumalanga	3	55	18
Northern Cape	6	64	42
Northern Province	2	13	36
North West	5	30	18
Western Cape	7	95	27
South Africa	42	506	258

Consequently, different provinces have very different experiences with rural local government. A great deal has depended on district councils' resourcefulness in promoting rural councils politically, financially and administratively. For example:

- KwaZulu's large regional councils do not have primary rural authorities, although geographically defined subregional councils, consisting of 'deployed' regional councillors, have been introduced.

- In North West province, district councils have established their own consultative local communities, which are not directly elected by the communities.
- In the Free State, primary rural local government is fairly well developed, even though rural councils depend on the executive assistance of district councils. Rural councils receive a special allocation of funding from district councils every year, and have implemented a great deal of infrastructure in farming areas, including the ex-homeland areas of Thaba Nchu and QwaQwa. The electoral formula, whereby farmers and farm workers receive equal representation – an arrangement which is technically ‘illegal’ in terms of the Local Government Transition Act – has gone some way to overcoming the social bifurcation of the farming areas.
- In the Northern Cape, rural councils are representative bodies with no budget of their own. They act in a purely advisory capacity to district councils.
- In the Northern Province, effective capacity resides only at district council level, alongside very fragile rural councils, which are frustrated with their powerlessness.

These differences are likely to influence provincial governments’ views when local governments are re-demarcated.

10.2 Rural local government: the emerging vision

The Rural Development Strategy Framework defines district and local councils in rural areas as the bodies which

- will interact with local community-based organisations (CBOs) in the determination of local needs
- will mediate competing interests in resource management, project planning or the provision of services
- have integrative functions across the sectoral concerns of different provincial and national departments
- can guarantee traditional concerns in setting development priorities owing to the presence of traditional authorities with ex-officio membership
- are responsible for ensuring that the needs of unorganised local people are taken into account.

These are primarily ‘representative’ functions. Building executive capacity in rural local government has been a thorny issue owing to these governments’ lack of financial base. The White Paper on Local Government visualises a very important role for district councils, as they are strategically located to undertake regional infrastructural planning. The White Paper is not dogmatic about the nature of district councils in future and recognises that there may well be differences in their powers – especially vis-à-vis primary local government – in different parts of the country. The White Paper proposes the following functions for district councils (DCDP, 1998: 70):

- Districtwide integrated planning, including land-use planning, economic planning and development, and transport planning
- Infrastructural development agencies, through their business levies
- Capacity building to primary local governments
- Maintaining municipal services in areas where inadequate administrative capacity exists at primary local government level (rural areas would be significant here)

As far as primary rural local government is concerned, the White Paper provides two options, each of which has key advantages and disadvantages, as set out below.

10.2.1 Amalgamated urban-rural municipalities

Here the boundaries of urban municipalities are extended to include the rural hinterland. The main *advantages* of this system is that it will reduce the cost of local government; broaden the tax base of municipalities; improve economies of scale in service delivery; facilitate access to urban services by rural communities; redistribute urban tax revenue; and promote integration of urban and rural development.

There are, however, some *disadvantages*. In the farming districts, this is not a popular option, because farmers fear being politically overwhelmed by large urban populations. There is a real danger of rural interests being marginalised on amalgamated councils.

10.2.2 Rural municipalities

Rural municipalities could continue to exist as representative institutions and could draw down powers from the district councils as they demonstrate sufficient administrative and financial capacity to administer their functions. Rural councils could also continue to be primarily representative bodies, with district councils performing municipal executive functions.

Rural municipalities have the *advantage* of being very flexible in their design, functions, powers and resources, and can be effectively adjusted to different settlement patterns. The *disadvantages* are that they may become another layer of expensive bureaucracy, and that they may prevent effective integration of rural and urban planning.

At present, the national Demarcation Board has been convened to determine the future of rural local government. It is quite possible that different provinces could argue for different systems. It is not possible, at this stage, to speculate further about the future system of rural local government. It should be remembered, however, that South Africa in 1999 is still in the transitional phase of local government, and that the final phase will only begin after the local government elections in the year 2000.

10.3 Rural local government finance

Until now, rural roads have been regarded as a provincial responsibility. With the introduction of rural municipalities (whether rural councils or district councils) the argument could be made that rural roads could now be classified as 'municipal roads'. This could have far-reaching implications for financing rural roads.

Firstly, if rural roads become the responsibility of rural local government, then 'finance should follow function' and current provincial road funding should, as a matter of course, be devolved to local government. Local government should beware of an 'unfunded mandate'.

Secondly, the provision of rural roads may be influenced by two debates taking place at national level. The first concerns the equitable share of nationally raised revenue for local government. This issue, which was first advised on by the Finance and Fiscal Commission, concerns national government transfers to cover operating or recurrent costs only (Department of Finance, 1998). The primary purpose of these transfers is to enable poor households to afford basic services. There is one type of transfer programme which may have

implications for rural roads: the matching transfer to assist communities in providing essential infrastructure for services that create significant positive economic spillovers for residents of other communities. These transfers can be justified to district councils to establish a core staff capability and to finance capital projects in proportion to their use by the poor, from whom no cost recovery is appropriate (*ibid*, 4.2.4). The applicability of such transfers in future to the provision of rural roads should be investigated, since rural roads very often produce spillover effects into neighbouring jurisdictions.

The second debate concerns a land tax. The Katz Commission (Chapter 3) has reported on the possible introduction of a land tax to finance district council activities. Such a land tax could either be in the place of, or in addition to, existing district council levies. It can, however, only be introduced in most areas by about the year 2002, or even 2004. A variety of considerations will influence the introduction of a land tax, including the problem of unsurveyed tribal land, possible resistance from rural constituencies and the administrative costs of such a tax.

10.4 Rural local government and capacity building

Certain general arguments can be made which will prevail regardless of the future system of rural local government. One of them is that many local authorities, including rural local authorities, have to undertake numerous new tasks in terms of the Constitution. This takes place in a context of new jurisdictions which may change yet again in the near future. Local government faces the following constraints at present:

- Most local authorities are based on new jurisdictions (since 1995) and are likely to undergo new demarcations, a process which adds to uncertainty.
- Most local councillors had no local government experience when they entered local government in 1995.
- Many local councillors do not have formal employment and therefore lack key organisational skills. Some councillors in rural areas are even illiterate.
- Many local councils have had to resolve differences in style between the newly elected councils and the inherited municipal administrations.
- Many local councils experience strong party-political competition, which hampers their functioning.

Despite these problems, the system is now settling down. Local authorities that experienced financial, administrative or political upheavals have been identified and, in many cases, were assisted by district councils or provincial governments to find their feet.

What is needed, however, is to move beyond crisis management. The first step in each province, district and locality should be to recognise the political, administrative and financial strengths that already exist and to build on them. Owing to the general lack of sensible key performance indicators in the local government arena, it is often the case that policy makers are not aware of the strengths that local governments possess.

The second step is to design a capacity-building programme for councillors and local officials in order to boost the integrative planning and developmental functions that local authorities are tasked with by the Constitution. What follows is a general philosophy of empowerment, based on building linkages between line departments and local authorities. Details will vary from province to province and from sector to sector. In the rural areas there will be even

greater diversity, since the current system of rural local government differs greatly from one province to another. The issue of rural local government will be addressed more directly in a later section.

Until now, two types of local authority capacity building have taken place:

- At the councillor level, training – where it has actually taken place – has taken the form of developing generalist skills. Local government training boards have offered generalist types of training, such as councillor ethics, financial management, budgeting, meeting procedures and the principles of integrated planning. There is a serious need, however, for the provision of more specialist sector-oriented skills for local councillors. Furthermore, there is a positive obligation (in terms of Section 154 of the Constitution) for line departments to assist local authorities to develop. It can also be argued that it is in the direct interest of line departments to build effective local capacity, not only to design and implement sector-specific projects effectively, but also to integrate such projects intelligently with other sectoral initiatives.
- At the level of municipal officials, municipalities have attempted to build their establishments according to the conventional municipal model, comprising a number of sectoral departments which take direct responsibility for delivering services under the direction of the Chief Executive Officer. This model has certain disadvantages. The interests of employees often take precedence over the interests of service delivery; it also tends to produce interdepartmental rivalries.

The issue of local government capacity building becomes a critical one. How can local government play the key integrative and catalytic development role envisaged for it by the Constitution? At least three potential approaches to local government capacity-building present themselves, as discussed below.

10.4.1 Building up the portfolio system: sectoral councillor training

One of the latent strengths which many local authorities possess is a system of portfolios or portfolio committees. These are embryonic forms of specialisation that enable councillors to develop knowledge and experience on specific issues. The portfolios offer the basis for a system of linkages between local authorities and line departments. It could therefore be argued that Housing Departments, for example, should liaise with at least one councillor per council. That councillor should be responsible for the Housing Portfolio. The same logic could apply to water services, welfare services, health, economic development and so forth.

This logic clearly applies to the rural roads sector, since ‘municipal roads’ is a local government function. The same logic could also extend to telecommunications. Even though telecommunications is not a municipal function, there is a precedent in that some municipalities have portfolios for ‘welfare services’, which is also not a local government function.

If road provision and telecommunications infrastructure are to be integrated effectively into local projects, it would make sense for at least one councillor per council to become acquainted with telecommunications issues. Such a councillor would become a valuable conduit through which provincial transport departments could prioritise and design rural roads, as well as harness community resources for emerging contractor services.

As far as telecommunications are concerned, the Universal Service Agency could promote the ideal of universal service extension through which telecommunications could be incorporated into other local projects. Telecentres, for example, could be introduced into municipal libraries.

In what ways, then, can a line department or a national agency promote the empowerment of the relevant portfolio councillor? There is great scope for sector-specific training for councillors. Line departments could offer courses on sectoral topics for councillors. These courses could be accredited by the newly established Local Government Sectoral Education and Training Authority. This would mean that courses could be standardised throughout the country.

Furthermore, in terms of the Skills Development Act (Act 97 of 1998), these sectoral authorities could establish constituent chambers. Water, housing, economic development, transport and any other sector could establish a training chamber, the purpose of which is to bring together role-players in that specific field. Typical participants would be the relevant line department, specialist agencies (such as the USA, CSIR and HSRC), local government associations (eg Salga) and training specialists. The chamber would design draft courses for local councillors or municipal officials, or would accredit courses designed elsewhere.

The advantage to this system is that councillors can enjoy specialised training. For example, a councillor who has completed a course in basic telecommunications issues would, upon passing an examination, obtain a recognised qualification. It would be possible to design the system of councillor allowances in such a way that financial remuneration is linked to the number of sectoral courses that a councillor has completed successfully.

This approach is fully consonant with the new Local Government Municipal Structures Act (Act 117 of 1998), which lays great emphasis on the management of local government performance. Local authorities will be expected to perform to higher standards than in the past, which implies some degree of professionalisation and specialisation of councillors.

The proposed system will make demands on line departments, as well as on agencies such as the USA. Not only do courses have to be designed and offered, but all kinds of other assistance may be required for local authorities to gradually build up experience in sectoral fields. For example, line departments – and agencies such as the USA – may have to build up their own internal capacity dedicated to supporting local authorities. *Internal departmental support units* may have to be created to assist local authorities in the following manner:

- Stakeholder identification and communication strategies
- Identifying possible projects
- Identifying possible revenue sources
- Conducting participatory planning processes
- Designing best-practice options for local delivery
- Assisting local authorities to integrate sectoral concerns into integrated development plans
- Drafting private-public partnerships and public-public partnerships
- Identifying ways in which sectoral projects could promote economic development
- Drafting key performance indicators for sectoral performance

10.4.2 Local government representation on provincial sectoral committees

Following its White Paper on Transport, the Western Cape established a provincial transport committee (Provcom), chaired by the MEC, upon which third-tier government would have representation. In addition, a provincial transport technical committee (Provtech) was established, comprising technical representatives of third-tier government and chaired by the Deputy Director-General of Transport and Public Works (Western Cape Department of Transport, 1997: 9).

Local government personnel have representation on both Provcom and Provtech. This provides a valuable opportunity for municipal staff to become involved in and informed on provincial policy and planning on a continuous basis. Town engineers, town planners and traffic officers from all 110 local authorities participate in Provtech's six specialist committees. If rural councils were to continue to exist, their inputs in such structures would also be valuable for placing rural roads squarely on the provincial agenda.

10.4.3 Building sectoral capacity for municipal staff

A third model of capacity building is to engage sectoral managers in overseeing services that have been outsourced.⁹ Many local government functions remain the de facto responsibility of other service providers, such as provincial and national line departments. These managers would have to liaise with such service providers to ensure that services are provided in a way that is consistent with council priorities and with the local Integrated Development Plan (IDP). In this way, the demands of specialist provision and overall integration of different sectors are reconciled. At district council level, for example, the functions of key sectoral managers can be grouped as follows:

- Land and agriculture
- Water and infrastructure (this section could include roads and telecommunications)
- Facilitation and social services
- Tourism and economic development

Their tasks would be to

- familiarise themselves with the relevant sectoral policy environments and to determine the council's specific responsibilities
- liaise with existing service providers to integrate services locally
- manage staff and consultants or service providers providing services on an agency basis
- champion particular priorities or programmes for their sector
- recommend projects for funding to the council in accordance with spatial and other criteria developed through the planning process.

The facilitation or social services manager would also be responsible for liaison between the council, the standing committees and communities. Administrative support could be provided for community liaison structures. Appointing such managers would have cost implications.

⁹ This model is proposed in the Ugh Integrated Regional Plan for southern KwaZulu-Natal, compiled by MXA, Durban.

Furthermore, it may be difficult for district councils to find suitable managers. In the interim, two strategies may be possible:

- Line departments could second officials to district councils. The disadvantage of this would be that seconded officials have dual lines of responsibility.
- Consultants could be appointed for a period. The disadvantage of this option would be that the council might not acquire sectoral expertise. Special measures need to be put in place to ensure that skills are transferred and that consultants 'work themselves out of the job'.

10.5 Rural roads and telecommunications in integrated development

Local governments, both urban and rural, have a key role to play in integrated planning. Local authorities are required – in terms of the Development Facilitation Act of 1995 and the Local Government Transition Act of 1994 – to devise land development objectives and to draft IDPs. This style of planning is remarkable not only for its emphasis on integration of sectors, but also because it transcends the erstwhile structured planning approach. Today, planning is regarded as a much more dynamic activity, with the process of planning being as important as the planning product ('the plan').

In addition, post-1994 planning emphasises economic development in addition to infrastructural and land development. Development proposals are now tested in terms of their potential for job and wealth creation. Provincial governments are directly responsible for promoting economic development in various ways:

- Departments of Economic Affairs are responsible for promoting SMMEs, for example, by supplying SMMEs' needs for information, advice and technology, devising systems of loan finance, facilitating marketing and business networking, encouraging universities and NGOs to assist SMMEs, and funding training for new business people.
- Departments of Public Works are responsible for implementing the community-based public works programmes.
- Departments of Welfare are responsible for promoting community development wealth-creation projects.
- Departments of Housing utilise housing projects to promote local building industries.
- Departments of Agriculture are orienting themselves to assist new small farmers.
- Parks boards are a growing source of employment-creating potential with South Africa's emphasis on tourism as a growth industry.

In terms of Section 152 of the Constitution, local authorities also have an obligation to promote economic development. This can be done in various ways, for example:

- Establishing local business service centres
- Promoting the establishment of local chambers of commerce
- Promoting local tourism strategies
- Promoting youth entrepreneurship
- Making municipal tendering practices more accessible to local and emergent business people
- Promoting small-scale agriculture
- Reorientating municipal libraries to serve new functions – they can become information centres, studying centres and information diffusion centres.

In the transport sector, integration of transport and other issues has received at least rhetorical support. The national White Paper on Transport states with regard to coordinated and integrated planning and decision making: 'Assurance of modal, spatial, institutional and planning integration is critical to transportation policy' (Department of Transport, 1996: 7). As far as land passenger transport is concerned, the White Paper (*ibid*, 21) suggests the importance of integrating transport with decision making on land use. For example, rural development will be promoted by improving access to opportunities and by ensuring that rural workers are housed in close proximity to their work locations and services, thereby reducing the need to travel.

The White Paper on Transport suggests that structures at all levels of government should be established to facilitate integrated planning of infrastructure, operations and land use in a coordinated manner. Priority will be given to development corridors and nodes, however, which may have questionable consequences for rural development in non-corridor areas.

The Western Cape's White Paper on Transport also emphasises integrated planning, according to the Provincial Development Council Act. The provincial Department of Transport will actively encourage the establishment of a rural development strategy for the Western Cape and will assist in the production of district development plans.

In the telecommunications sector, the White Paper on Telecommunications (1995: 1.11) states: 'Because of the fundamental importance of the telecommunications sector to national economic growth and development, planning for the sector should be closely integrated into broad economic, trade and social planning and effectively linked with other information policy initiatives.'

The role of the Universal Services Agency is particularly important. It is expected to ensure that telecommunications components are introduced into development projects whenever their objectives can be reinforced by information flows and communication. To this end, the Agency will need to build close links with CBOs and development organisations in both public and private domains (*ibid*, 1.19–1.20). Propounding the virtues of integrated planning is one thing; it is another thing altogether to make it happen effectively. There are two challenges to be faced.

10.5.1 Building local authority skills in integrated planning

Many local authorities, especially the smaller ones, are very vague as to what integrated planning entails. The challenge of integrated planning is a formidable one. For local governments, many of whom lack experienced councillors and officials, the sophistication required to plan across numerous sectors and effect economic development may prove a very tall order. There is a great risk that conventional structured plans will be designed without the requisite attention being paid to population dynamics, economic development or the effective integration of sectors.

In the absence of effective local government direction, certain capacity-building processes have been initiated:

- In the Free State, the Free State Local Government Association (Freloga) has been very active in designing IDP approaches, manuals and workshops for local authorities. This has the advantage of the issue being addressed at provincial level. Freloga is also well known

to the local authorities concerned and is active in monitoring line departments' programmes.

- The Boutek division of the Council for Scientific and Industrial Research (CSIR) has developed a very useful IDP manual. In association with the Department of Constitutional Development and the German agency GTZ, it has piloted IDPs in virtually all the provinces. Not only have local authorities been assisted, but workshops on new approaches to planning have also been held for provincial Departments of Local Government and for consultants.¹⁰

10.5.2 Interdepartmental integration in service delivery planning

The imperatives of economic development and integrated planning require new ways of interdepartmental cooperation. Provincial rural development strategies, for example, are primarily frameworks for service delivery for provincial departments; however, they also take into account – and attempt to influence – the programmes of national departments. The Department of Land Affairs and the Department of Water Affairs, for example, have played an important part in drafting these strategies, even though they are national line departments. It is noteworthy that some national line departments are developing strong links with provincial governments and have appeared on the forefront of coordinating provincial rural development initiatives. In the Northern Cape, for example, the Department of Water Affairs and Forestry is becoming increasingly prominent as a catalyst for development; in the Free State, the Department of Land Affairs has this role.

This means that patterns of influence and cooperation in the South African governmental order do not follow rigid constitutional demarcations. A pragmatic spirit of 'the job must be done' prevails in various provinces, and new forms of cooperation are evolving that cut across formal jurisdictions and job descriptions. This also opens the way for provincial governments to try to influence national departments and other agencies in order to ensure that their provincial objectives are met. It also enables national departments to influence provincial governments to reorient development initiatives.

There is a growing realisation of the need for *interdepartmental and intergovernmental cooperation* of various types. Such cooperation serves several purposes:

- Multiple perspectives on problems can be debated.
- Problems can be understood more fully.
- New alternatives can be designed.
- New relationships can be created.
- Different types of expertise and resources can be combined.
- Agencies can draw on each others' networks of CBOs, NGOs and consultants.
- Solutions to problems often have to balance several interests and policy priorities simultaneously.
- Information can be shared.
- Confusion at community level about government programmes can be removed.
- Cooperation can contribute to agreement about future legislation.

¹⁰ Interview, M Coetzee, Boutek, CSIR, 2 February 1999.

How can such interinstitutional cooperation be achieved? Recent South African governmental history is littered with examples of failed attempts at interdepartmental cooperation. Despite valiant attempts to secure the cooperation of their counterparts in other departments, many officials have found the following (Atkinson et al, 1998):

- Some departments are guided by demand-driven imperatives, whereas others work according to supply-driven programmes. This causes tension when taking decisions about locating development projects.
- Disagreements arise about ways of promoting local economic development: Who should be funded? What should the approval criteria be? What kind of support services should be provided?
- Sharing information timeously and effectively is notoriously difficult, partly due to secretive departmental cultures and interdepartmental rivalries, but also because officials do not know what information their counterparts in other departments really need.
- Departments operate according to different intradepartmental patterns, such as the degree of decentralisation and regionalisation of functions. Officials find it difficult to locate their counterparts with comparable levels of authority and discretion. Some departments give their officials more latitude to make commitments as regards cooperative endeavours than other departments.
- Departments operate according to different intradepartmental budgeting cycles.

Local government is the only sphere of government that has an intrinsic interest in cooperative relations among departments and other developmental institutions. Local authorities frequently have to experience the frustration and the embarrassment, in the face of their communities, of development projects grinding to a halt because the cooperation of a key department or agency cannot be secured in time.

The problem also surfaces at project level, where local authorities often do not have the knowledge needed for integrating infrastructural, economic and social aspects into a single project. Housing projects have come to grief because local authorities did not know how to integrate entrepreneurial development with the actual construction of houses; water projects have been chosen unwisely because local authorities did not realise that they were financially unsustainable; and land reform projects have suffered from the inadequate provision of social facilities for the beneficiaries. Effective intersectoral project design has been the exception rather than the rule.

This discussion seems to have drifted far from issues of telecommunications provision and the rural roads sector. The provision of sustainable, affordable and appropriate roads and telecommunications services will, however, if we are not careful, suffer from the same lack of synchronisation as other development projects. Telecommunications provision, for example, has to be addressed from various points of view, including financial sustainability, geographic location of infrastructure, integration with entrepreneurial development, training of support staff and promotion of public awareness of options. It is easy to see that telecommunications could make a phenomenal difference to the operation of schools, clinics, municipalities, NGOs, CBOs and local businesses. To plan effectively, however, will require significant interdepartmental and intergovernmental collaboration.

The real challenge is to find appropriate institutional processes for securing interdepartmental cooperation. International experience has shown that the creation of such processes is a lengthy endeavour that needs serious political commitment and organisational skill. Effective

interinstitutional cooperation for rural development will require strong provincial government coordination. This is happening in some provinces. In the Free State, for example, a 'cluster' of provincial departments has been created which is piloting integrated planning for the south-west Free State.

The international literature indicates that a much more thorough negotiation process is required for effective interinstitutional collaboration. Gray (1989: 93) concludes that the importance of process issues cannot be overemphasised when planning and conducting successful collaborations:

Good-faith efforts to undertake collaboration are often derailed because the parties are not skilled in the process and because insufficient attention is given to designing and managing a constructive process. Good intentions are insufficient to counteract the typical dysfunctional dynamics that ... characterise interorganisational relationships. Stakeholders' predispositions, stereotyping, institutional mistrust and historical animosities create powerful disincentives to collaborate unless opportunities are created in which they can be tested and modified.

A new school of thought, known as 'negotiated order theory', has emerged. Its focus is on organisational change rather than permanence. Increasingly, there is the recognition that collaborative initiatives can be understood as emergent interorganisational arrangements through which organisations collectively cope with the growing complexity of their environments.

Three distinct phases are required, each with sufficient time, resources, political commitment and effective facilitation skills.

Phase 1: Problem setting

This 'pre-negotiation' phase is concerned with getting to the table so that face-to-face dialogue can begin. It involves identifying the stakeholders, mutually acknowledging the issues that unite them, and building commitment to address these issues through face-to-face negotiations.

- *Common definition of the problem:* It may be necessary to have delicate shuttle diplomacy by a third party to identify the obstacles to collaboration and to tease out a problem definition that is sufficiently broad or ambiguous to incorporate the agendas of multiple stakeholders.
- *Securing commitment to collaborate:* Participants will have to be convinced that collaboration will improve the status quo and serve their interests. The stature and credibility of a third party may be necessary to convince stakeholders of the benefits of participation. It is quite likely that departments will underestimate, or will be reluctant to acknowledge, their interdependence on others. Sometimes they only become involved because of their fear of being left out, or to prevent another department from improving its relationship with a third party. A variety of methods are available for improving the attitudes of the parties, including 'levelling' conferences, pre-problem-solving meetings to discuss possible obstacles to the process, and skills training in problem solving (Anstey, 1991: 173.)
- *Identifying stakeholders:* The process should include all those whose expertise and information are essential for solving the problem. It may well be necessary for a mediator to convene the various parties individually and help them identify a suitable representative. This will ensure that the representatives have comparable status and authority from the various departments.

- *Securing resources*: Sufficient financial resources and time need to be made available for what may be a fairly lengthy process.

The depth and detail of this pre-negotiation phase give some idea of what will be required for departments to secure real cooperation from other departments. One cannot assume that other departments will have much sympathy for, or commitment to, say, roads and telecommunications, as they are primarily concerned with meeting their own programme targets. What becomes possible, in such circumstances, is to derive *joint goals* in which the parties may have quite different end goals, but may combine in a collective effort to attain a common objective.

Joint goals should be distinguished from *common goals* (in which parties are offered equal shares in benefits created by collaborative effort) and *shared goals* (in which parties work towards a common objective but benefit differently, such as subcontracting arrangements). Cf Anstey (1991: 167).

In general, it is likely that departments will only be interested in each others' functions if it promotes their own core functions, and even then they would only be interested in implementing initiatives on their own terms. It may be necessary to employ a neutral facilitator to undertake a period of shuttle diplomacy among various departments, in order to test the waters and pinpoint potentially sympathetic individuals. It would also be necessary for departments to have a real understanding of other departments' policy priorities.

Appointing a facilitator is typically something which should be done carefully. If possible, the support of the provincial government (the Premier or Director-General's department) should be obtained when selecting a facilitator. The facilitator should have sufficient experience of government functioning to be able to anticipate the inevitable 'toes under the sand'.

Phase 2: Direction setting

During this phase, stakeholders identify the interests that brought them to the table, and they sort out which of the interests they hold in common, and which conflict. They also identify potential trade-offs. This phase involves several stages:

1. Ground rules are identified.
2. The agenda is set – this is often the subject of intense debate and requires considerable care and skill.
3. Subgroups and task forces are organised.
4. Joint information search: This involves gathering information from all the participants. Complex and controversial data have to be sorted out and expert opinion may have to be invited. During this process, the parties get to know each other better.
5. Multiple options should be explored before prematurely foreclosing on any of them, and may be most usefully generated in subgroups. The mediators may play a crucial role at this stage. Another possible procedure is to circulate a draft proposal which is amended until it is acceptable to all parties. There are several techniques for achieving integrative agreements (*ibid*, 177):
 - *Expanding the pie*: Scarce resources are increased so that each party can meet its needs.
 - *Compensation*: In cases where it is not possible to expand the pie, one party may obtain its goal while the other is compensated with an accepted or valued alternative.
 - *Logrolling*: In cases where there is more than a single issue at stake, different parties'

goals can be realised on different items. Parties can trade low-priority goals for high-priority goals.

- *Cost-cutting*: Parties seek to reduce each others' costs or fears in developing a solution.
- *Bridging*: Parties are able to invent new options to meet their mutual needs. This requires in-depth discussion of real wants underlying parties' opening positions.

6. Agreement is reached and the deal is closed. This can be done either by the 'building-block approach' (securing agreement on each issue and then combining them) or by 'agreements in principle' that provide a general framework of agreement within which details can subsequently be worked out.

This type of intensive interaction is rare in the South African government context at present. There are, however, some attempts in this direction, notably in those provinces where rural development strategies have been drawn up (KwaZulu-Natal, Gauteng and the Free State). The KwaZulu-Natal process was particularly inclusive and thorough, but this intensity brings its costs. There is typically a long gap, frequently influenced politically, between drawing up a strategy and actually getting it implemented.

The unfortunate aspect of such rural strategies is that they deal with development issues at a high level of generality, which often conceals important choices and trade-offs to be made. It is only when decisions are taken on departmental programmes and projects that interdepartmental cooperation is really tested.

Phase 3: Implementation

Implementation may well require new relationships among stakeholders. Structures for standardising information exchanges, and new methods for joint decision making, may be necessary. This may require the establishment of an entirely new organisation or joint supervising committee, or it may be done by one of the existing stakeholders, probably alongside an advisory committee consisting of all the stakeholders, to secure compliance. It should be noted that collaboration is especially susceptible to collapse during implementation, especially if different departments have evolved strong organisational cultures of their own.

Once effective forms of interdepartmental collaboration are established, a great variety of institutional combinations and linkages will develop. In many departments, and at many levels of government, South Africa is entering a phase of unprecedented institutional complexity. In the rural roads sector, this means that provincial Departments of Transport need to be encouraged to bring their sectoral interests in line with other departmental planning priorities. Systems of information sharing and joint planning need to be created at provincial level.

In the telecommunications sector, there is an argument for the USA and Satra to raise issues of telecommunications with provincial governments. The Premier's departments are usually a good place to start. The Mpumalanga Premier's department is currently engaged in a very thorough process of drawing up a growth and development plan.

A further option is the establishment of service providers forums, which are being established in several provinces. Telkom is already negotiating with provincial governments in this regard,¹¹ and this is a good precedent.

How can integrated rural development really take place? Very often, integrated planning (and implementation) needs a credible project champion. The hallmark of such a champion – either an institution or an individual – is that other players are willing to make the effort because the champion is seen as reliable, effective and operating in good faith. Experience in several provinces have shown that different departments tend to take the lead in getting rural strategies drafted, negotiated and (to some extent) implemented. A great deal depends on the political leadership, officials' enthusiasm and the administrative competence of different departments. There is predetermined choice about an appropriate departmental champion, since any department's work is influenced by what other departments do. Whether the impetus comes from the Department of Transport, Health, Land Affairs or Water Affairs is, to some degree, immaterial. Promoting rural roads and telecommunications in a specific province will therefore depend on identifying an appropriate champion and convincing that champion of the importance of roads and telecommunications.

Finally, there is no substitute for local governments working to coordinate the activities of a multiplicity of line departments in local areas. The IDP processes will contribute to a culture in which line departments and other agencies will have to liaise with local government, who will integrate specific programmes with broader goals. In KwaZulu-Natal, for example, regional Service Providers Forums, in which district councils play a key role, are being established. Line departments are increasingly recognising the advantages of working with local government in an integrated way; in KwaZulu-Natal, for example, the Department of Land Affairs is building strong relationships with local government.

10.6 Conclusion

Building effective rural development institutions is not easy. Bringing new functions such as rural roads and telecommunications into the local government ambit raises even more complex questions. The argument can be made, however, that the demands of integrated development planning require such key sectors to be incorporated into planning for the traditional local government functions. Furthermore, local government is often the only agency that can persuade and cajole line departments and other sectoral agencies to adjust their programmes to integrated local plans. There is, therefore, a *prima facie* argument for roads and telecommunications to be included in the IDP process in rural areas. Furthermore, the capacity building of local councillors and officials to understand such functions, at least enough to be able to make a meaningful contribution to integrated planning, needs to be attended to.

These are serious challenges indeed. Nevertheless, the emphasis of current climate in government policy making and delivery is on practicality, flexibility and innovation. Rigid boundaries between institutions, departments and spheres of government are being increasingly blurred. In this context, now is the time to argue strenuously for rural roads and telecommunications to be put more forcefully on the local and provincial agenda.

¹¹ Interview, T Nxasana, Government Relations Manager, Telkom, 17 February 1999.

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