

An Analysis of the Toll Road Policy of the South African National Roads Agency Limited

by

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Abstract

The task entrusted to the South African National Roads Agency Limited (SANRAL) is to provide and manage a world class, sustainable national roads network for the country as cost-efficiently as possible, in order to encourage economic growth and develop the quality of life of all South Africans. Underlying this task was the acknowledgement that transport plays a vital role in the economic and social development of any country.

To achieve this, the South African Government currently provides government-guarantees of several billion Rands to enable SANRAL to negotiate loans from the capital markets to fund the development and maintenance of the national toll road network. With regard to non-toll national roads, SANRAL receives per annum budgetary amounts to maintenance and development. However, such funding is only sufficient to maintain approximately 40% of the non-toll national road network. The above-mentioned information and statistics imply that currently SANRAL may have insufficient funds available to develop and maintain the required primary national road network. SANRAL's main objective is to obtain the funding required to develop and maintain the proposed primary national road network and to reduce the dependency on government-guaranteed debt. As a result the toll roads policy alternative was elected as a vehicle towards executing SANRAL's mandate. This article explores the modalities associated with the toll road policy alternative pursued by SANRAL.

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CHAPTER 1

BACKGROUND

1.1 Introduction

This chapter is utilised to provide the background information relevant to this dissertation. The overview is an introduction to the South African National Roads Agency Limited (SANRAL) and includes the principal tasks of SANRAL. The history of national roads in South Africa is provided and described and includes the following: the status of roads before 1935, the National Road Board, the National Transport Commission, the national road scheme between 1948 and 1961, expansion of the national roads programme between 1961 and 1971, national roads finances between 1948 and 1971, toll roads and the South African Roads Board. The history of national roads in South Africa is followed by a section dedicated to SANRAL as the current national roads authority in South Africa and the following information regarding SANRAL is provided in this chapter: the vision, mission and values of SANRAL, the principle key objectives of SANRAL, the strategic challenges of SANRAL, the primary road network, and SANRAL's vision towards 2010. This chapter further provides the frame of reference for this dissertation and in a following section the structure of the dissertation is described and explained.

SANRAL is currently the national roads authority of South Africa.

1.2 General overview: the South African National Roads Agency Limited

This section of the chapter is an introduction to SANRAL as the current national roads authority of South Africa.

The South African National Roads Agency Limited (SANRAL) was established in terms of the *South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998)* operating as an autonomous statutory company in terms of commercial principles in line with the Government's objective to transform the public sector. The Minister of Transport is the only shareholder in SANRAL. The mandate of SANRAL is to maintain and develop South Africa's 20 000 kilometre national road network and to manage assets with an approximate value of one billion Rand (The South African National Roads Agency Limited: Declaration of Intent, 2002: 5).

SANRAL's principal tasks are the following:

- (a) To plan, design, build, operate, rehabilitate and maintain South Africa's national roads.
- (b) Providing and maintain a high standard primary national road network for South Africa.
- (c) To generate capital from the management of its assets.
- (d) Conducting research to improve the quality of South Africa's roads.
- (e) To advise the Minister of Transport on issues regarding South Africa's national roads.
- (f) Upon demand from the Minister of Transport and in accordance with a foreign country, to finance, plan, build, operate and maintain roads in that country (The South African National Roads Agency Limited: Declaration of Intent, 2002: 5).

SANRAL superseded the South African Roads Board (SARB) as the national roads authority in South Africa. The following were reasons for the establishment of SANRAL:

- (a) To provide the national roads authority with commercial and financial decision-making capability.
- (b) Improved access to the money and capital markets.
- (c) To enhance effectiveness, efficiency and faster decision-making (Van Gerve, 2003: Interview).

By providing a well developed and maintained national road network, SANRAL plays an important role in the socio-economic development of South Africa as a whole, and in particular, the advancement of historically disadvantaged citizens. SANRAL develops its projects in such a manner as to make a significant contribution to society (The South African National Roads Agency Limited: Annual Report, 2000:1).

The purpose of this dissertation is to analyse SANRAL's toll road policies and to establish whether the SANRAL toll road policy alternative is effective and efficient in the developing, building and maintaining of a primary national road network in South Africa.

After providing an overview the history of national roads will be described.

1.3 The history of national roads in South Africa

The history of national roads in South Africa is relevant to this dissertation in order to indicate the development of the toll road policy in South Africa, and is described in this section of the dissertation to provide a background in terms of which the possible policy alternatives are analysed.

The national roads of South Africa comprise a network of superior inter-city roads. In legal terms, national roads exist only when and where they have been declared as such. The purpose of declaring a national road is to enable funds from the National Road Fund (currently referred to as the Portfolio Fund) to be utilised to construct a road or improve and maintain an existing road. Until 1971, the responsibility for road construction and maintenance remained with the administrator of the province concerned. The National Road Board (NRB) and its successor, the National Transport Commission (NTC), were essentially responsible to ensure that the most effective and efficient route was selected, and laid down national road standards to be adhered to. After 1971, the NTC operated as a roads authority in its own right and was permitted to construct and maintain any declared national road. The NTC determined that the national road system of South Africa should comprise only freeways and withdrew the national road status of all roads, which did not conform to freeway standards. This decision fragmented the network of declared national roads to several separate sections primarily near and around cities (Floor, 1985: Preface).

The cost of building freeways quickly proved to be beyond the capacity of the National Road Fund and a variety of stretches of provincial road later had to be re-declared national roads. These national road declarations were responsible for the existing register of national roads comprising several routes and fragments of routes, varying in standard. The national road scheme has created a countrywide network of quality roads that constitute a complete national road network. The amount of available funds and the routes and standards on which it was spent, have been important issues regarding national roads since the national road scheme started in 1935. The actual construction of the national roads has been undertaken by the provincial road departments (Floor, 1985: Preface).

The status of roads before 1935 is described in the following section of this chapter.

1.3.1 The status of roads before 1935

The status of roads before 1935 is described in this section of the dissertation.

Part of the arrangements made in 1910 at the time of the union between the four provinces of South Africa was the allotment of responsibility for roads and railways. Railways were to be a matter of the central government and roads were to remain a provincial concern. The idea at that time was that traffic over long distances within the country should be assigned to the Union Government. Primarily roads were utilised only for short distance traffic and its provision was viewed as a matter for provincial concern. As such, road provision remained reliant on different authorities at provincial level. The provincial base for taxation was limited. In 1925, it became apparent that the Union had lagged behind other countries in the development and provision of high-class roads. Whilst the Union spent £125 000 000 on the development of railways and harbours, almost nothing had been contributed by the central government towards the building of roads. The total spending on the development, construction and maintenance of roads by the provincial administrations since 1910 had been less than £20 000 000. It was apparent that existing sources of the provincial administration's revenue were not sufficient to manage the demand for good roads (Floor, 1985: 1).

The requirement for co-ordination in road development and building had also become necessary. In 1918, the Department of Roads of Natal had proposed that a well-devised network of national roads should be provided throughout the Union and that a general tax should be levied to pay for its appropriate development, construction and maintenance. In 1925, a Roads and Bridges Committee was appointed to analyse the issue. The committee recommended that the roads of the Union be categorised into national roads, provincial main roads and provincial branch roads. The anticipated national roads were to be selected in such a manner that it would comprise an arterial transport system. The proposed length of the national road network would be 5 200 miles and the funds to be provided by the Union Government over a period of 10 years, was calculated at £3 700 000. The committee also proposed the establishment of a national road board that should take responsibility for the implementation of the national road network. The report was rejected. However, the need for better roads became more apparent and several conference papers were presented calling for road development and improvement and providing methods of acquiring the necessary capital (Floor, 1985: 1, 2).

In 1932, at the Congress of Divisional Councils of the Cape Province, it was stated that the central government should assume full financial responsibility for all national and provincial roads, as the provincial administrations could no longer afford the development, building and maintenance of such roads. The Congress of Divisional Councils of the Cape Province, however, did not demand amalgamated control of the road network. The provincial

administrations were in favour of local administration and management of roads and opposed possible amendments, which could affect their jurisdiction. The provincial administrations were only in favour of financial support from the central government. Furthermore there was limited co-operation between the provincial administrations regarding a national road policy. The provinces opposed centralised control over national roads. Some experts were of the opinion that national roads could only be successfully developed if central government took full responsibility thereof. The central government should not only provide finance for national roads, but should take total administrative responsibility for their development and maintenance. The provincial considerations were to prevail and only 10 years onwards did the recommendations of the Roads and Bridges Committee come to fruition, whilst the financial trouble of the provinces continued. Road transport also increased in such a manner that it had become a rival to railways and the Government appointed a commission of inquiry into road competition (Floor, 1985: 3).

The Commission of Inquiry into Road Competition was instructed to analyse the competition to the services of the South African Railways Administration, as the railways were government property in which a significant amount of public money had been invested. The commission was unsure whether its mandate included issues concerning road policy, and recommended in 1929 that a national road board be created. The commission further recommended that the national road board should have independent status and represent different interests free of political control. The national road board should be responsible for the formulation and implementation of a national road policy and its duties should include the classification of roads and the location and co-ordination of feeder roads within the provinces. The Commission of Inquiry into Road Competition also recommended the creation of a road fund and central government control over spending on all public roads, excluding municipal roads. The national road board should also co-ordinate policy towards road and railway building in conjunction with the railway board. It should also be empowered to make recommendations regarding motor taxation. However, the Government continued with the regulation of road transport services and no institution with the responsibility for co-ordinating the provision of road and rail infrastructures was created. As an alternative, a National Road Board (NRB) with limited authority, restricted primarily to the location and finance of national roads, was created by virtue of *the National Roads Act, 1935 (Act 42 of 1935)*. The National Road Fund (NRF) was also established by the said legislation and provided the Minister of Interior with various powers regarding public roads (Floor, 1985: 4).

The role of the National Road Board in the development of roads in South Africa is described in the following section of the dissertation.

1.3.2 The National Road Board

In this section of the dissertation historical information is provided regarding the National Road Board.

The National Roads Act, 1935 (Act 42 of 1935) received support from all parties in Parliament. A criticism levelled at the *National Roads Act, 1935 (Act 42 of 1935)* was directed towards the responsibility of the National Road Board (NRB). *The National Roads Act of 1935 (Act 42 of 1935)* did not entrust the NRB with the actual building of the national roads. The construction function was still the responsibility of the provincial administrations and continued the same as before. The NRB would select the routes after discussions with the administrators and would make available the required funds. With the introduction of *the National Roads Act, 1935 (Act 42 of 1935)* the Government stated that the NRB would not interfere with the tasks of the provincial administrations and that the objective was not to enhance the centralisation of power, but to support the provincial administrations and to co-ordinate inter-provincial road provision (Floor, 1985: 4, 5).

The National Roads Act, 1935 (Act 42 of 1935) made provision for the establishment of the National Road Fund (NRF) into which would be paid an amount of the customs duty collected on every gallon of petrol imported from 31 March 1935, as well as any other funds made available by Parliament. The NRB would manage the NRF and pay expenses authorised by the said Act in agreement with the estimates approved by the Minister. The Minister could also award loans to the NRB out of funds made available by Parliament. The NRB was also empowered to settle from the NRF the costs incurred by the provincial administrations in the construction or maintenance of any road declared a national road, provincial road or special road, on condition that the work had been authorised by the NRB. The NRB was required to execute various functions that included the development of road maps, standard designs and specifications, and the inspection of the road works undertaken. It also had to embark on research regarding road construction and was instructed to provide to the Minister for approval a five-year plan of works to be undertaken at the cost of the NRB (Floor, 1985: 5, 6).

The role of the National Road Board in the development of roads in South Africa ended in 1948 when it was abolished.

1.3.2.1 The National Road Board is abolished

The National Road Board was abolished due to the reasons described in this section.

The autonomy of the NRB was not satisfactory to the provincial administrations, which wanted the members of the NRB to be their representatives. The provinces further advocated that the funds of the NRB should be spent as recommended by the provincial nominees. The provinces had indicated that the NRB functions should be limited to the selection of national routes, the approval of the estimates and proposals of the technical board and the allocation of the funds to the provinces. The NRB was abolished on 1 December 1948, with its functions assigned to the new National Transport Commission (Floor, 1985: 33, 34).

The National Transport Commission as governmental institution had a prominent role in defining the current status of national roads in South Africa. The role of the NTC in the history of national roads is described in the following section.

1.3.3 The National Transport Commission

The historical background of the National Transport Commission (NTC) as the national roads authority in South Africa is stipulated in this section of the dissertation.

The National Transport Commission (NTC), which superseded the NRB in 1948, was concerned with other issues as well as national roads. The NTC originally comprised six members that convened once a month to facilitate its work, however, the NTC with a quorum of three members could deal with a variety of matters, including the advertising on roads and the payment for land needed for the purposes of declared roads. In terms of the *National Roads Act, 1935 (Act 42 of 1935)* and the *Transport (Co-ordination) Act, 1948 (Act 44 of 1948)* the NTC was not authorised to arrange the building of national roads directly, but had to continue through the provincial administrations. This was, however altered by the new *National Roads Act of 1971 (Act 54 of 1971)*, that entrusted the NTC with the responsibility for the planning, developing, constructing and maintenance of a national road network for the Republic of South Africa (Floor, 1985: 37).

The NTC was established in terms of the *Transport (Co-ordination) Act, 1948 (Act 44 of 1948)* and had powers regarding roads similar to those of the NRB. In fact, the *National Roads Act, 1935 (Act 42 of 1935)* had not been repealed, except for Section 2, which

established the NRB and Section 3 that provided for the appointment of its employees. In terms of the new Act these employees became public servants. There were also minor amendments in the wording of the functions taken over by the NTC from the previous NRB, particularly to guarantee collaboration with the administrators of the provinces, but otherwise the provisions of the *National Roads Act of 1935 (Act 42 of 1935)* were retained. There was one addition to the preceding arrangement, which made provision for the appointment of an advisory committee on roads. One representative nominated by each administrator had to be included as a member of the advisory committee. The Minister also mandated the advisory committee to analyse all issues referred to it. The new Act also required that the Secretary of Transport provided personnel to assist the NTC and the advisory committee on roads. The Department of Transport would attend to all administrative work arising out of these functions. The provisions in the *Transport (Co-ordination) Act, 1948 (Act 44 of 1948)* ended the autonomy of the national roads authority and provided the provinces with an effective say in any consideration regarding the provision of national roads. The new NTC also found it difficult to acquire the necessary funds to continue with the programme for constructing national roads. The Government would also dictate other considerations (political requirements) and funds would have to be found for projects of national interest (Floor, 1985: 38).

During its term, the NRB had decided to finance national roads only, although it was empowered to pay costs incurred on provincial roads. The NTC was also reluctant to have any roads except national roads incorporated in its expenditure programme, because available funds were limited. The NRF would also pay all the costs pertaining to the building of national roads through towns with a rateable value of not more than £300 000. It was not the intention that the NRF be utilised to acquire land in municipal areas or that progress with the original national road programme be negatively impacted because of the NTC's participation in urban road provision (Floor, 1985: 38).

The development of the national road scheme between 1948 and 1961 is described in the following section of this chapter.

1.3.3.1 The national road scheme: 1948 to 1961

The NTC opposed pressure for the national road scheme to be extended and concentrated on the building of those national roads that had been declared on the recommendation of the NRB. In March 1961, approximately 94% of the declared network had been constructed. In March 1957 the NTC had approved to provide 70% of the funds for constructing 900 miles of

special roads out of the NRF. The provincial administrations were to locate the outstanding 30% of the funds (Floor, 1985: 38, 39).

After 1948 the NTC had declared various special roads. The NTC assumed that the purpose of a national route was to make available roads for the movement of motorists between the populated urban areas. National roads were not intended for the transport of large quantities of freight. The purpose of special roads was to enable transport on routes where no rail services existed and were regarded as important roads. The NTC's financial assistance in the building of these special roads limited the funds available for the national road scheme. The NTC was obliged to maintain its support, and during the period 1954 to 1957 an additional 300 miles of special roads were incorporated in the spending programme. Notwithstanding the progress made with the building of national and special roads, the NTC acknowledged in 1958 that the increase in motor vehicle traffic exceeded the rate at which roads could be provided and furthermore various sections of the completed national roads were nearing the end of its life cycle. Various sections of national roads were insufficient for the volume and speed of the traffic. The redevelopment, reconstruction and rehabilitation of some national roads had become necessary. Rebuilding in the amount of approximately £5,9 million had been undertaken and more was required. The NTC was planning on completing the original national road scheme, but it was now also obliged to initiate planning for the upgrading of the current national roads in the vicinity of the cities (Floor, 1985: 39, 40).

The NTC considered the expansion of the national road scheme as important and the expansion of the national roads programme between 1961 and 1971 is described in the following section.

1.3.3.2 Expansion of the national roads programme: 1961 to 1971

The expansion of the national roads programme between 1961 and 1971 is described in this section of the dissertation.

The NTC considered the expansion of the original national road scheme as essential. Various new roads were included in the national road programme in 1961. This programme included new national routes as envisaged by the NRB when the original scheme was developed, as well as the realignment of current routes. The doubling of the national roads between Johannesburg and Pretoria and between Potchefstroom and Klerksdorp were authorised. Eastern and southern ring roads around Johannesburg and an eastern future

ring road for Pretoria and a ring road connecting national routes 2, 3 and 14 outside Durban were approved (Floor, 1985: 45).

In March 1970 the building programme of approved national roads included 5 866 miles of road, 928 miles of double carriageway freeway and 1 420 miles single carriageway freeway. Special roads of approximately 818 miles had been approved for financial support from the NRF. The total sum of 8 214 route miles included in the national roads programme implicated the upgrading of existing roads and new road works (Floor, 1985: 45).

The financial status of the national roads authority had a direct influence on the development of national roads and in the following section of this chapter the national road finances between 1948 and 1971 is described.

1.3.3.3 National road finances between 1948 and 1971

The status of the national road finances between 1948 and 1971 is described in this section.

The NRF continued to obtain 3d a gallon from the income of the customs duty on imported petrol after the NTC was established in 1948. This yielded £3,3 million during 1949 to 1950. In 1950 the NRF allotment was increased to 6d a gallon and the yearly spending on national roads was preset at £5 million per annum. It was proposed that this amount would pay the administrative costs, interest on outstanding Treasury loans as well as the maintenance of the current national roads and the building of new national roads. The disparity between the fixed amount of £5 million and the annual yield of 6d per gallon on imported petrol had to be utilised to reimburse the outstanding Treasury loans of the NRF, which was approximately £16 million in March 1950 (Floor, 1985: 45, 46).

Although the NTC now had the benefit of a fixed yearly income on which to plan future road works, its financial position was still not adequate. Even though the income from the tax on petrol until that time had been lower, substantial amounts had been borrowed from the Treasury and the annual expenditure during both financial years prior to that of 1950/51 had surpassed £5 million. This implied that if the NTC could not borrow funds, it would have less to spend under the new dispensation. The NTC calculated that it would cost a minimum of £6 million per year to complete the national road scheme over a period of eight years. With the new arrangement only approximately £3 million would be available for new road building every year. From 1939 to 1950, the cost of building a mile of national road had increased from £7 000 to £12 000. Various roads constructed before the war required maintenance

and the NTC was now also responsible to make funds available for the construction of special roads. Therefore it was understandable that the advancement of the national road scheme would continue even slower than before, unless additional funds were made available. Government then decided to increase the fixed contribution to the NRF to £5,8 million as from April 1951 (Floor, 1985: 46).

By 1958 it had become evident that the NRF required even more revenue and Parliament decided to increase the tax on imported petrol from 6d to 8½d per gallon. The capital assigned for freeways were not to be utilised for other purposes. The increase in funds resulted in hefty accumulated balances in the NRF and the NTC became pressurised to use the available money at its disposal or to give explanations for its underspending in view of its requests for more funds in the past. By 1961, the NTC had redeemed all the outstanding Treasury loans and was able to make financial contributions towards the building costs of urban freeways in Johannesburg, Cape Town, Durban and Port Elizabeth. In 1961 the Government also approved that the source of income for the NRF would comprise a tax on all imported and locally produced petrol, diesel, furnace oil and paraffin. With the decimalisation of the monetary system, this amount was set at 5,35 cents per gallon (Floor, 1985: 46).

In 1958 it was calculated that a minimum amount of approximately R363 million could be spent during the next 12 years compared with the R193 million spent during the previous 12 years. Of the future spending approximately 60% would be used for the building and upgrading of national roads, 12% would be utilised towards the construction of urban freeways in the metropolitan areas and 11,5% would be used for the provision of special roads. Only 8% would be spent on road maintenance. The burden to reimburse the Treasury loans incurred before 1950, which amounted to 16,8% of the income of the NRF during the past 12 years, had been removed. The NRF income increased as a result of the new arrangement. The income from the tax on fuel increased by 21% during the financial year 1961/62 to nearly R27 million. The NTC, for the first time, could plan all expenditure from the NRF on road works still to be attended too. The NRF revenue continued to increase and in 1963/64 the surplus income was approximately R3,1 million. In April 1965 the allotment of customs and excise duty on fuel allocated to the NRF was increased to six cents per gallon and by 1968 almost R2 million per annum was being received by virtue of the interest on the investment of collected surplus funds (Floor, 1985: 46, 47).

In this period several projects were planned and implemented. During the preceding 30 years, funds for the developing and building of national roads had always been in short

supply and there was a general awareness to confine expenditure to those projects, which would improve the productivity of road transport. The financial position of the NTC did not only accommodate the current need for roads, but also created the chance to plan and build roads for the future. Economic realities were ignored when new schemes were planned and it was inevitable that the spending could not continue indefinitely (Floor, 1985: 47).

The National Roads Act, 1971 (Act 54 of 1971) that came into operation on 1 October 1971, allocated the exclusive responsibility for the planning, developing, building and maintenance of national roads to the NTC as the independent national roads authority. The *National Roads Act, 1935 (Act 42 of 1935)* was repealed. A variety of provisions were made to enable the relations between the provincial administrations and the NTC to be separated and the NTC donated all its plants and equipment being utilised by provincial road departments to the provincial administrations. The new legislation, in fact, ended the partnership between the central government and the provincial administrations; from this time forth the NTC could continue by itself. The NTC comprised the secretary for Transport, as chairman, three senior members of his staff and four others. The director of the Directorate National Roads and his staff remained civil servants (Floor, 1985: 65).

The *National Roads Act, 1971 (Act 54 of 1971)* permitted the NTC to implement a national roads programme that provided for the construction of a network of dual carriageway national freeways. The previous national roads not integrated in this programme, reverted to the road networks of the provincial administrations. All special roads also reverted to provincial control. In accordance with the new scheme, routes totalling 2 776 kilometres were declared national roads, for inclusion in the national roads programme at the end of March 1972. Of this total distance, national roads with dual carriageways extended for 332 kilometres, those with single carriageways for 1 153 kilometres, whilst national routes being planned or built totalled 1 291 kilometres. The network of national freeways for which the NTC anticipated paying approximately R1 250 million during the subsequent 10 years, would include the following roads:

- (a) From Cape Town past Colesberg, through the Free State and Gauteng to the southern border of Zimbabwe.
- (b) From Cape Town alongside the Cape and Kwazulu-Natal coasts to the southern border of Mozambique.
- (c) From Durban through south-western Kwazulu-Natal, the north-eastern Free State and Gauteng to Johannesburg.

- (d) From Pretoria through Gauteng and Mpumalanga to the western border of Mozambique.
- (e) From Cape Town along the Cape coast to the southern border of Namibia, at the Orange River (Floor, 1985: 65).

The status of the national road finances between 1971 and 1983 is relevant because it convinced Government to analyse the feasibility of toll roads in South Africa. This is described in the following section.

1.3.3.4 National road finances: 1971 to 1983

The status of the national road finances between 1971 and 1983 is described in this section of the dissertation.

In March 1972, six months after the *National Roads Act, 1971 (Act 54 of 1971)* came into existence, the accumulated balance in the NRF exceeded R63 million. Funds for the year comprised mainly the allocation of a portion of the tax on motor fuel, which had exceeded the spending by R29 million. The allocation had been increased to 1,73 cents per litre from 1 April 1971 and with the added income, it was thought that the good financial position of the NRF would persist. When the new Act came into being, spending by the provincial administrations in terms of the arrangement for the continuation of road works in development totalled R55 million, but no road works have as yet been implemented directly by the NTC (Floor, 1985: 70).

The adequate financial status of the NRF increased further during the following year and the accumulated balance surpassed R100 million. The NTC had expectations of making extensive progress with the national freeway programme, the calculated cost of which had increased to R1 316 million over the following 10 years. In 1974 an unpredicted decrease in the estimated income of the NRF occurred as a result of a decline in fuel consumption, subsequent to the conservation measures instituted by the Government. Building costs had also risen since 1971, as a result of both inflation and the elevated design standards introduced into the road construction programme (Floor, 1985: 70, 71).

In the 1974/1975 financial year another decline in the predicted income of the NRF occurred whilst the escalation in building costs continued at approximately 15% per annum. As there was no prospect of completing even the three-year plan of the NTC without supplementary funding for the NRF, the Government gave permission to increase the allocation of fuel tax

by 0,25 cents to two cents per litre, commencing on 1 April 1975. Although that benefited the NRF, building costs escalated by 20% during 1975 and the limited funds barred the NTC from implementing several contracts for scheduled road works. The allotment of fuel tax to the NRF was increased again from April 1976 to 2,154 cents per litre. The purpose for this increase was intended to compensate the NTC for the further expenditure to be incurred as a result of the road-building programme in the Kruger National Park, which was supported by the NRF. An additional, but temporary, increase in the allocation to 2,579 cents per litre was approved in 1977. Despite these increases in the funding, the NRF remained insufficient to manage the approved road building programmes and continual adaptations were needed to limit the rate of spending. In the financial year ending March 1977, approximately R141 million was spent directly on road building and maintenance as opposed to an amount of at least R177 million, which the NTC required. The funds spent were also R70 million less than the minimum spending required to sustain the national freeway-building programme of 1971 (Floor, 1985: 71, 72).

In the 1977/1978 financial year, direct expenditure on road building and upgrading was R146 million, which surpassed the revenue of the NRF by R10 million. The short-term increase of 0,425 cents in the allotment of fuel tax from 1977 had not provided adequate revenue to reinstate the required spending programme, and the allotment of fuel tax was decreased from April 1979, when the allocation was fixed at 2,354 cents per litre (Floor, 1985: 72).

The over-expenditure from the NRF income from 1976 generally had been financed by means of the accumulated reserves, which amounted to R83 million at the beginning of 1976. During 1980, expenditure from the NRF amounted to R187 million as opposed to an income of R143 million, and the reserve was exhausted. In the following financial year, the expenditure dedicated to previously approved contracts absorbed nearly all the funds available for road building, and it was therefore essential to negotiate loans of R25 million and R6 million from Treasury to finance two new projects totalling R36 million. No other new road works could be executed. 20 years after the NTC reimbursed all the outstanding loans, which had limited the building of national roads between 1935 and 1957, the NRF was inadequate to deal with the spending programme yet again (Floor, 1985: 72, 73).

The NTC was financial unable to continue with the development and construction of a primary national road network in South Africa and a new policy was required to ensure that the NTC could attend to the establishment thereof. Tolling national roads was a policy alternative to be considered.

1.3.3.5 New policy alternative: national toll roads

A new policy alternative, namely national toll roads was introduced to assist in the financing of the national road network and is described in this section of the chapter.

During the late seventies the NTC experienced difficulty funding the programme of national road building. The NTC suggested that the allocation of fuel tax to the NRF should be increased. However, the Government was not prepared to sacrifice any more funds for that purpose, nor was it willing to increase the tax on fuel, because of the possible effect on the high inflation rate. When the NTC realised that additional funds from fuel tax would not be made available, it began to investigate other possible sources of income (Floor, 1985: 88).

The toll of national roads was one policy that had not been applied on South African roads, even though several tolls had been charged primarily for the use of bridges in the Western Cape Province before the advent of the Union. The possibility of toll funding had been considered as early as 1965. Schemes for raising tolls to finance urban freeways were debated at the beginning of the 1970s. In 1977, members of the NTC assumed that the weakness of high administration costs, the necessity for high vehicle volumes to ensure the feasibility of toll road schemes and opposition by South African motorists to tolls would be complicated to overcome. The choice to continue with a toll road policy was enhanced by the positive impression, that toll roads made on a former Prime Minister, whilst visiting the Far East in 1980. The Government then predicted that a toll paid for the use of travelling on a national road would be a less inflationary policy of raising additional funds than an increase in the price of fuel and it advocated the idea. The postulation was that the toll policy would be linked to the increase in productivity or saving in operating costs that the toll road user would achieve (Floor, 1985: 88).

The prospect of enhancing the NRF by virtue of tolls was then analysed by the NTC after a parliamentary selected committee had considered the policy proposal. Authority to levy tolls was ultimately approved by Parliament. The first national road projects chosen for toll funding were:

- (a) The route now known as the Tsitsikamma toll road.
- (b) The route between Frere and the main road between Ladysmith and Harrismith.
- (c) The Du Toitskloof tunnel.
- (d) The route between Bela Bela (Warm Baths) and Modimolle (Nylstroom) to be constructed as an extension to National Route 1 (N1) (Floor, 1985: 88).

The bypass of Pinetown being built on the Durban to Pietermaritzburg route was also considered as a possible toll road. The NTC could not declare any portion of a national road a toll road unless an alternative route was available to road users. The tolls levied could be different according to the category of vehicle utilising the road. Different levies could be charged on different national roads. The funds collected for each toll road had to be spent on works in connection with the improvement and maintenance of the relevant national road or the operation of the toll facilities. The most important advantage that the NTC has derived from the authority to levy road tolls, was that funding may well be borrowed for the building of national roads. This was likely to yield adequate revenue from tolls to reimburse the interest on the loan and ultimately its redemption, as well as the funds required to maintain the national road (Floor, 1985: 89).

The NTC was to be superseded by the South African Roads Board for various reasons, which is described in the following section.

1.3.4 The South African Roads Board

The South African Roads Board (SARB) superseded the NTC as the national roads authority in South Africa in 1988. This section of the chapter is devoted to the SARB.

The South African Roads Board (SARB) superseded the NTC as the national roads authority in terms of the provisions of Section 2 of the *South African Roads Board Act, 1988 (Act 74 of 1988)*. The *National Roads Act, 1971 (Act 54 of 1971)* was not repealed and the most important considerations for the establishment of the SARB were the following:

- (a) Interested parties wanted to be more involved in the decision-making process and policy issues regarding national roads, as well as the national road network in general. The *South African Roads Board Act, 1988 (Act 74 of 1988)* made it possible for stakeholders to participate in the decision-making processes. The most important advantage, which the NTC had derived, was the authority to implement its toll road policy (Floor, 1985: 8).
- (b) The establishment of the SARB was an attempt to improve the decision-making process. Valid decisions and actions were the goals of the SARB (Van Gerve, 2003: Interview).

1.3.4.1 The structure of the South African Roads Board

The SARB comprised of 12 members appointed by the Minister of Transport.

The SARB was constituted as follows:

- (a) One member was the director-general of the Department of Transport.
- (b) Two members were officials in the Department of Transport, nominated by the director-general of Transport.
- (c) The premiers of the provinces nominated two members.
- (d) One member was an official in the service of a local authority.
- (e) One member was a professional associated with an academic or research institution.
- (f) The Minister of Transport appointed five members (one from each category mentioned below). These members were not public officials. The categories mentioned above consisted of the following interested parties/stake holders:
 - (i) Organised commerce, industry, mining and agriculture.
 - (ii) Motorists.
 - (iii) Persons involved with the planning, design, construction and maintenance of roads.
 - (iv) Persons from the freight transport industry.
 - (v) Persons involved in the transport of passengers or the passengers themselves (Section 3 of the *South African Roads Board Act, 1988 (Act 74 of 1988)*).

The SARB had particular authorities and responsibilities.

1.3.4.2 The general powers and administrative work of the South African Roads Board

The general powers and administrative work of the SARB are described in this section of the dissertation.

In terms of the provisions of Section 5 of the *National Roads Act, 1971 (Act 54 of 1971)*, the SARB would plan, design, construct or maintain any national road, toll road or inter-provincial bridges.

The Department of Transport would commence all executive and administrative work arising out of the functions of the SARB (Section 16 of the *South African Roads Board Act, 1988 (Act 74 of 1988)*).

In 1998 the South African National Roads Agency Limited superseded the South African Roads Board as South Africa's national roads authority. The next section of this chapter is utilised to describe and provide relevant information regarding the South African National Roads Agency Limited.

1.4 The South African National Roads Agency Limited

The South African National Roads Agency Limited (SANRAL) is the current national roads authority in South Africa and is described in this section of the dissertation. The policy alternatives analysed in this dissertation are implemented by SANRAL and therefore this background information of SANRAL is relevant to this study.

The South African National Roads Agency Limited was established in terms of the provisions of the *South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998)* and superseded the South African Roads Board (SARB) as the national roads authority in South Africa. The following were reasons for the establishment of SANRAL:

- (a) To provide the national roads authority with more commercial and financial freedom.
- (b) Improved access to the money and capital markets.
- (c) To enhance effectiveness, efficiency and faster-decision making (Van Gerve, 2003: Interview).

South Africa has the difficult task to attempt to be equal with the developing regions of the world regarding economic, welfare and social development. SANRAL and the Government have the responsibility to ensure that all South Africans have access to basic needs, which includes health, housing, food, education and transport. This basic needs concept of the South African society is a reminder to SANRAL and to other public institutions that the ultimate goal is to provide all citizens in South Africa with the opportunities for a satisfactory life. To accomplish this goal, South Africa's economic growth and development are important elements to the solution. It is necessary for SANRAL to develop new policies in providing the social goods for the people of South Africa. To enable SANRAL to deliver on the basic needs concept, SANRAL requires a shift from the abstract to the concrete, from the aggregate to the specific. The advantage of the basic needs concept is that it provides a

basis for organisational analysis and policy-making. It can activate political support, as well as amalgamate thought and action in different fields. This concept could be demonstrated by virtue of co-ordinated and complimentary actions in the areas of transport, energy, the environment, raw material utilisation, consumption patterns, urbanisation and international trade development. Various and apparently dissimilar problems become connected, once it is acknowledged that the ultimate intention of development is to meet the basic needs of the people of South Africa (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 4).

South Africa's commercial expansion also depends on well-developed and maintained national roads. The Government also accepted that there is a great demand for transport development, especially in the historically disadvantaged urban townships, peri-urban residential areas and rural areas. In order to attend to this, SANRAL has a mandate from the Government to develop, operate and maintain the national roads of South Africa. In view of the limited resources, SANRAL is also challenged with the task to be innovative, effective and efficient to warrant that South Africa will be able to compete in the regional and international trade (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 4).

In developing countries such as South Africa, the provision of national roads is an important factor for the economic development of communities. The economic development of communities will require SANRAL to consider the following:

- (a) The importance of a primary road network, that consists of both national roads and provincial roads.
- (b) Funding needs and the consequences of a deteriorating road network for the economy of South Africa.
- (c) The requirement to keep and develop South Africa's human capital in the transport sector.
- (d) The use of innovative (non-tax-based) funding policies in the development and building of national roads (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 12).

SANRAL recognises the economic limitations within which the Government has to accomplish its objective, which is to provide in the basic needs of the people of South Africa. Therefore SANRAL has developed a programme for the forthcoming 10 years to assist in obtaining this objective. The successful execution of this programme, together with the

appropriate funding from the National Treasury, could result in the containment and removal of the funding backlog for national roads in poor and very poor condition, on the remaining non-toll road network. The most important objective of the programme is to facilitate the following:

- (a) The establishment of a primary road network.
- (b) Acceptance for the implementation of the proposed extension of the toll road network and the related financing plan.
- (c) Stimulation of economic development through better national road infrastructure.
- (d) Rectification of disparities as a result of the legacies of the past.
- (e) Equitable distribution of national assets between communities (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 12).

In order to achieve the objective of providing in the basic needs of the people of South Africa, a national road network of approximately 20 000 kilometres that is optimally managed and effectively maintained, is necessary. The creation of such a road network may promote the economic arteries of South Africa and will also support the provincial governments in obtaining their own objectives for service delivery. It is envisaged that approximately 7 000 kilometres of the national road network will be tolled (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 12).

SANRAL's Declaration of Intent was created to support its strategic vision, which is stipulated in its programme known as Horizon Twenty Ten. The Declaration of Intent is the practical implementation of the objectives of SANRAL's vision to establish an efficient and effective national road network to promote the social and economic welfare of the people of South Africa. The Declaration of Intent identifies the projects and objectives that SANRAL will embark on. However, as the deliverables for non-toll roads are dependent on the proposed allocations from the National Treasury, any reduction or increase of the allocations could affect SANRAL's capacity to deliver results. The Declaration of Intent should be viewed as work in progress that may be amended, depending on the funds that the National Treasury allocates (The South African National Roads Agency Limited: Declaration of Intent, 2002: 4).

SANRAL's primary principle in obtaining its objectives is the preservation of the current assets. The current assets could provide SANRAL with the necessary infrastructure platform and a demand-driven upgrade for a primary road network. The Declaration of Intent is primarily directed at asset preservation by virtue of a programme to limit the existing decay,

as well as to upgrade the national roads of South Africa. The successful limitation of decay of national roads, the implementation of effective and efficient maintenance, as well as a demand-based upgrade programme are all directly related to the implementation of the toll road policy and the allocations received from the National Treasury (The South African National Roads Agency Limited: Declaration of Intent, 2002: 4).

The vision, mission and values of SANRAL are identified and described in the following section of the dissertation.

1.4.1 The vision, mission and values of the South African National Roads Agency Limited

SANRAL's vision, mission and values are identified and described in this section.

SANRAL's vision is to be renowned as a world leader in the provision of an advanced primary road network in Southern Africa (The South African National Roads Agency Limited: Declaration of Intent, 2002: Preface).

SANRAL's mission is described as the following: SANRAL is a commercially driven institution committed to accomplish its vision for the economic benefit of the Southern African community through:

- (a) A dedicated and professional team.
- (b) Innovative technology.
- (c) Capable and proficient service providers.
- (d) Enhancing the user-pay principle by means of promoting the toll road policies (The South African National Roads Agency Limited: Declaration of Intent, 2002: Preface).

SANRAL's values are the following:

- (a) To always act with integrity.
- (b) SANRAL is committed to service excellence.
- (c) To view employees as its most valued asset.
- (d) To be committed to participative management.
- (e) To be act pro-active in providing in the needs of the citizens of South Africa and its stakeholders (The South African National Roads Agency Limited: Declaration of Intent, 2002: Preface).

SANRAL also has certain principle key objectives, which are stipulated in the forthcoming section.

1.4.2 The principle key objectives of the South African National Roads Agency Limited

SANRAL's principle key objectives as described in its strategic vision (Horizon Twenty Ten) are the following:

- (a) Managing the national road network and ensuring good value for money.
- (b) To continuously promote the effectiveness and efficiency of business practices.
- (c) Enhancing and maintain market confidence.
- (d) To implement policies to improve the life of all citizens.
- (e) Safe national roads for all users.
- (f) To operate in conjunction with road users, transport providers, other public authorities and the private sector.
- (g) Conducting its business efficiently and effectively and to ensure continuous improvement.
- (h) Achieving international standards with regards to the developing, building and operating of national roads.
- (i) Promoting innovation in knowledge and in practical terms.
- (j) To conduct and promote roads-related research.
- (k) To market SANRAL's national road policies and solutions to all road users (The South African National Roads Agency Limited: Declaration of Intent, 2002: 7).

SANRAL's key objectives in terms of its Declaration of Intent in support of its strategic vision can be summarised, as follows:

- (a) To expand, develop and maintain the national road network, in order to enhance socio-economic development.
- (b) Identifying and implementing alternative funding policies.
- (c) To apply the funds received from National Treasury to non-toll roads and utilise alternative funding policies to expand, develop, operate and maintain the remainder of the national road network (The South African National Roads Agency Limited: Declaration of Intent, 2002: 7).

In addition to its principle key objectives, SANRAL has also identified strategic challenges that require further attention.

1.4.3 The strategic challenges of the South African National Roads Agency Limited

The present changes in the economy and the social environment could extensively influence South Africa's transport system. SANRAL therefore has to align itself by mainly focussing on its customers and the development in the markets. This implies that SANRAL has to analyse the challenges regarding freight, passenger and tourist transport, while simultaneously evaluating and programming the cross-cutting issues amongst all transport modes, primarily with regard to financial sustainability, safety, the environment and developing human capacity. Based on the primary road network's existing and predicted future performance compared to customer and national objectives, 30 key strategic challenges need to be addressed (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 13).

SANRAL's strategic challenges can be divided into two categories:

- (a) Firstly, those challenges that are external to the transport system and are affected by the choices made by parties outside the transport sector.
- (b) Secondly, the challenges within the transport system, that is more within the control of the Minister of Transport, other governmental transport organisations and other transport providers. Table 1/1 indicates 10 general co-ordination challenges and 20 transport-related strategic challenges (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 14).

With reference to Table 1/1, it is envisaged that SANRAL will have to deal with the following challenges during the next 10 years:

- (a) To establish the primary national road network, which will demand financial contributions from National Treasury.
- (b) SANRAL, together with the other road authorities, will be challenged to consolidate human resources and institutional arrangements to ensure effectiveness, efficiency and liability.
- (c) The transport sector needs to develop institutions to ensure that responsibility is taken for every road in South Africa. This is necessary to warrant a well-developed and

maintained road infrastructure that will enhance economic growth within the different provinces and regions (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 14).

SANRAL also has particular key challenges with regards to the year 2010, which are described, in the following section.

1.4.3.1 The key challenges of the South African National Roads Agency Limited for 2010

SANRAL has identified the following key challenges for 2010:

- (a) In view of SANRAL's limited available funds, it is of importance to create a primary national road network in order to eliminate the funding disparity between public demand and the National Treasury.
- (b) SANRAL should continue to implement toll road policies and promote it by also including roads previously under the authority of the provincial governments.
- (c) Develop and enhance public-private partnerships in the provision of roads.
- (d) Incorporate all management systems with the budget process; this could result in a superior value for Rand/km spent.
- (e) Analyse and appropriately utilise alternative funding policies. The use of these policies may not only alleviate the National Treasury's financial difficulties, but could also reduce the financial pressure on the provincial governments.
- (f) To promote and implement toll road policies to permit the self-funding of national roads (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 15).

In practical terms the national toll road network forms part of the primary road network of South Africa. The primary road network is described in the following section.

Table 1/1: SANRAL key strategic challenges

General co-ordination challenge		Transport related strategic challenge
Tourism/long distance	1. Co-ordination with macro-tourism strategy	(i) Roads policy and capacity management (ii) Coach industry sustainability (iii) Cost configuration of public transport operators (iv) Improvement in service quality
Rural	2. Co-ordinated rural infrastructure strategy	(v) Long-term road investment sustainability
Urban	3. Incorporated spatial planning	(vi) Reasonably priced basic access for all citizens (vii) Effective public transport system (viii) High cost public transport system (ix) To forecast and administer 2020 car usage (x) Transport planning, development and regulation
Freight	4. Alignment with trade strategy 5. Integrated spatial planning - trade locality 6. Co-ordination with the Southern African Development Community (SADC)	(xi) High cost and inefficient service (xii) SADC transportation times and cost (xiii) Maintain and develop highly developed factors
Safety and environment	7. Balance in user cost with externality minimisation	(xiv) Improve the risk alignment

Safety and environment	8. Equilibrium of job creation with externality minimisation	(xv) Division of enforcement and regulation
Sustainability	9. Equilibrium between sustainability and user cost and services	(xvi) Sufficient public funding for non-toll roads (xvii) Rationalise all road authorities (xviii) Enhance communication and response mechanisms
Capacity	10. Alignment of the institutional supply chain for capacity (align both institutions and strategy)	(xix) Address basic skills development needs (xx) Make provision for new innovative roles in Government and in the private sector

Source: Adapted from The South African National Roads Agency Limited: Horizon Twenty Ten (2002: 14).

1.4.4 The primary road network

The existing 14 000 kilometres of national roads under SANRAL's authority comprises both national toll and national non-toll roads. Whilst national toll roads are financed by virtue of the user-pay policy, non-toll roads are financed through the National Treasury. The challenge that confronts SANRAL with regard to non-toll roads, is that road use demand is increasing whilst available finance is declining. The existing funding level from the National Treasury is not even sufficient to fund the maintenance required for the existing non-toll road network, furthermore insufficient funds are thus available for the expansion of the non-toll road network to satisfy the increasing public demand for roads. With a supposed finance level of R900 million per annum for the non-toll national road network, together with the non-realisation of the national toll road policies, it could be predicted that the current national road network will quickly deteriorate in the next decade. In practical terms this implies a deficit of approximately R8,5 billion. The further implication is that the proposed funding levels are only adequate to maintain approximately 40% of the non-toll road network (The South African National Roads Agency Limited: Declaration of Intent, 2002: 6).

SANRAL's most important principle key strategic challenge is the developing and maintaining of an effective and efficient primary road network. SANRAL is of the opinion that public demand indicates that a national road network in South Africa should comprise both toll and non-toll roads. The different demands on tax-based funds imply that the expansion of the primary road network requires to be strategically financed by virtue of SANRAL's toll road and Concession toll road policies. These funding policies could decrease the financial pressures on the National Treasury in funding the basic requirements of the public. SANRAL is also of the opinion that the toll road policies could be viewed as a stride towards obtaining its long-term goal (The South African National Roads Agency Limited: Declaration of Intent, 2002: 6, 7).

Various provincial road sections have been identified in conjunction with the provincial governments to be included in the long-term strategic national road network. This translates to approximately 13 000 kilometres of roads under the authority of provincial governments that are required to be integrated into the national road network. SANRAL therefore would be responsible for approximately 20 000 kilometres of national roads of strategic and economic importance, also referred to as the primary national road network (The South African National Roads Agency Limited: Declaration of Intent, 2002: 16).

In the following section more information is provided regarding SANRAL's vision towards the year 2010.

1.4.5 Towards 2010

This section of the dissertation is utilised to provide information regarding SANRAL's vision towards 2010.

SANRAL's Declaration of Intent is its reply in meeting the different needs of the public of South Africa. The Declaration of Intent is directed towards the toll road policies envisaged in the Horizon 2010 document, which is SANRAL's strategic vision for the year 2010. The Government also supports SANRAL's vision. SANRAL's strategy includes the safeguarding of South Africa's existing national roads. The planned toll road network could lessen the pressure on the fiscus and thus release funds for the expansion of the non-toll national road network. SANRAL's toll road policies may finance national roads off-balance sheet, from a non-governmental source, resulting in a saving to the fiscus. These funds may subsequently be utilised for current important public demands, for example; health, poverty relief, water and electricity (The South African National Roads Agency Limited: Declaration of Intent, 2002: 24).

It is also important to realise that the primary national road network may be an important factor in the economic development of South Africa. National roads also provide access to areas of economic and social activity, which could assist in the development of South Africa (The South African National Roads Agency Limited: Declaration of Intent, 2002: 24).

SANRAL's Horizon 2010 document states the toll road policies that could permit SANRAL to enhance the economic and social development of all the citizens of South Africa. SANRAL's Declaration of Intent serves as the means through which to obtain its objectives. It is important to note that without the required funding, support from the Government and innovative toll road policies it could be difficult to achieve these objectives (The South African National Roads Agency Limited: Declaration of Intent, 2002: 24).

After the background of SANRAL has been provided, the frame of reference of the dissertation should be explained and described. The frame of reference will give an explanation regarding the kind of research undertaken, as well as the institutional context within which the study is undertaken.

1.5 Frame of reference

This dissertation is an empirical research study of the toll road policy of SANRAL. The empirical research will include the opinions of SANRAL employees. It will be partially

conducted by means of interviewing key employees of SANRAL. Some employees are currently working at SANRAL's head office, whilst others are working at SANRAL's northern regional office in Menlyn, Pretoria. The empirical research, with particular reference to SANRAL's toll road policy, will include the study of various documents, including official SANRAL published documents and various official papers that were utilised by the National Department of Transport and the Cabinet. The researcher will also relate the relevant Acts, such as the *South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998)*. With regard to the chapter dedicated to public policy analysis the researcher utilises various published books. SANRAL has a direct policy responsibility and provides advise to the Government regarding national and toll roads policies.

After clarity has been provided regarding the frame of reference for the study, it is of importance to describe the structure of the dissertation.

1.6 Structure of the dissertation

The structure of the dissertation is presented as follows:

Chapter 1 provides an introduction to the dissertation and a general overview of SANRAL. The chapter is utilised to describe the history of national roads in South Africa and the following are examined: the status of roads before 1935, the *National Roads Act, 1935 (Act 42 of 1935)*, the National Road Board, the National Transport Commission and the South African Roads Board. The following information regarding SANRAL is also provided: the vision, mission and values of SANRAL, the principle key objectives of SANRAL, the strategic challenges of SANRAL, the primary road network and SANRAL's vision towards 2010. Chapter 1 also describes, the frame of reference and the structure of the dissertation.

Chapter 2 describes the research methodology utilised in this dissertation.

Chapter 3 provides for definitions regarding Public Administration, effectiveness and efficiency, as it is relevant to this study. Chapter 3 is also utilised for positioning this study within the discipline of Public Administration.

Chapter 4 is devoted to the defining of the concepts "public policy" and "public policy analysis" and provides information regarding the advantages and limitations of public policy analysis. Chapter 4 also identifies and describes the public policy analysis process, the elements of the public policy analysis process and the role of goals and objectives in the analysis process.

Chapter 5 is an introduction to the analysis of the possible policy alternatives, which are applied by SANRAL. This chapter of the dissertation is devoted to the following: the identification and clarification of the problem, identification of the objectives, criteria for evaluating the policy alternatives, selecting the policy alternatives to be evaluated and the analysis of the Non-toll road policy alternative.

Chapter 6 is dedicated to the analysis of the SANRAL toll road policy alternative.

Chapter 7 is an analysis of the Concession toll road policy alternative.

Chapter 8 represents the conclusion and recommendations following the practical policy analysis process and refers to the Non-toll road policy alternative, the Concession toll road policy alternative, and the SANRAL toll road policy alternative.

1.7 Conclusion

This chapter is provided to generate the background information relevant to the dissertation. The information provided is relevant to the analysis of the toll road policy of the South African National Roads Agency Limited (SANRAL). An overview of SANRAL is given as an introduction to the said institution.

This chapter provides information regarding the history of national roads in South Africa. The following information is provided and described: the status of roads before 1935, the role of the National Road Board (NRB) in road development, the history of the National Transport Commission (NTC), the national road scheme between 1948 and 1961, expansion of the national roads programme between 1961 and 1971, the status of national road finances between 1948 and 1983, national toll roads as new policy alternative and the South African Roads Board (SARB).

In this chapter the following information regarding SANRAL is provided as the current national roads authority in South Africa: the vision, mission and values of SANRAL, the principle key objectives of SANRAL, the strategic challenges of SANRAL, the key challenges of SANRAL pertaining to the year 2010, the primary national road network and SANRAL's vision towards the year 2010.

After the information pertaining to SANRAL is provided, this chapter is also utilised to describe and explain the frame of reference of the dissertation. The structure of this dissertation is also provided and described in this chapter.

The research methodology is another important priority in research. The relevant methodology should be well suited to the research undertaken. The research methodology for this dissertation is described in Chapter 2.

CHAPTER 2

RESEARCH METHODOLOGY

2.1 Introduction

The purpose with this chapter is to describe and explain the research methodology utilised in the research process for the purpose of the dissertation. The following is attended to and is described in this chapter: the importance of research, a description of research, principles for researchers, types of research, the research process, a description of research methodology, research methods, research techniques, the research methodology, the problem statement, research objectives and the research questions relevant to the dissertation, and a conclusion.

The importance of research is briefly described in the following section of the dissertation.

2.2 The importance of research

The importance of research is described in this section of the dissertation.

The significance of research is strongly associated with the search for knowledge. Research could produce scientific data that may be utilised to verify the applicability of actions and the effective and efficient use of available resources. The data obtained by virtue of research may be utilised to improve decision-making in the public sector (Brynard & Hanekom, 1997:1).

The choices made by government officials may affect the lives of the general public. The public is also increasingly demanding more positive results from public policies. Elected officials frequently request data to assist them in making policy decisions. Data is required to develop and implement effective and efficient policy alternatives and to safeguard the public against ineffective decision-making. Data is also required to promote effective management of public institutions in order to achieve better service delivery. Research could assist public servants to adopt a rational approach to decision-making. A rational approach implies that policy decisions are based on the correct identification and description of the problem and the possible results of various policy alternatives. Rational decision-making also implicates

that some public officials should have the ability to impartially obtain correct data and analyse relevant information (Johnson, 2002: 3).

Research is described in the following section of the dissertation.

2.3 A description of research

This section of the dissertation is utilised to define and describe research.

Research could be described as a procedure with which an attempt is made to attain solutions to questions and to resolve policy problems in a systematic manner with the assistance of accurate data. Four interpretations of scientific research could be identified:

- (a) The purpose of research is the search for truth.
- (b) Research is a social activity intended to resolve particular theoretical and empirical questions.
- (c) Research is the development of relevant information and data.
- (d) A business undertaking that should be effectively managed to achieve the required results (Brynard & Hanekom, 1997: 2).

The Concise Oxford Dictionary, (1982: 884) describes research as “a careful search or inquiry after or for or into; endeavour to discover new or collate old facts by scientific study of a subject, course of critical investigation; make researches into or for”.

The purpose with Public Administration research is to provide accurate data to political decision makers and to promote effective policy formulation and implementation. In public administration, the public increasingly demands measurable results and customer satisfaction. These demands indicate that research knowledge is required. Research may empower public officials to adopt a rational approach in decision-making (Johnson, 2002: 2).

There are certain principles for researchers that the policy analyst should take notice of.

2.4 Principles for researchers

There are certain principles in research that the scientist should adhere to when conducting research.

Two primary ethical requirements for researchers could be acknowledged, namely honesty and confidentiality. Honesty in research relates to the conduct of the researcher in the reporting process. It could be stated that it is the ethical obligation of the researcher to report the truth to the decision makers. The biases and personal opinions of the researcher should not be reflected in the research report. In the research process is it possible that the researcher may obtain confidential information, and the revealing thereof may be detrimental to specific persons or groups. Researchers should realise that no confidential information has to be revealed in the reporting process and that the private interests of the participants in the research process is a primary concern (Brynard & Hanekom, 1997: 4).

Johnson, (2002: 8) is also of the opinion that honesty and confidentiality are primary principles that the researcher should adhere to. The general principles that a researcher should adhere to are the following:

- (a) Honesty: Definitions, methods, techniques, biases and limitations should be made available to the decision makers.
- (b) Accuracy: Quality management procedures should be applied through out the research process.
- (c) Appropriate methods and techniques: This implies that adequate procedures should be implemented during the data compilation and data analysis processes.
- (d) Relevant measures: Measures should also be appropriate and valid.
- (e) Objectivity: The biases of the researcher should not be reflected in the research.
- (f) The interests and confidentiality of participants should be protected.

The researcher should be aware of the types of research that could be utilised.

2.5 Types of research

The literature survey indicated that it is possible to categorised research. In this section the types of research are identified and described.

Brynard & Hanekom, (1997: 5) are of the opinion that research could be categorised in basic and applied research. Johnson, (2002: 5) also categorises research in basic and applied research, although he refers to basic research as scholarly research. "Basic" and "applied" may be described as follows:

2.5.1 Basic research

Basic research relates to the development of theories and the testing of hypotheses that have been derived from the theories. Generally basic research is not undertaken for any immediate practical purpose, even so, the theories and hypotheses could be utilised at a later stage (Brynard & Hanekom, 1997: 5).

Basic research indicates that the researcher seeks knowledge regarding the functioning of phenomena by developing and testing theories. A theory could be an unspoken postulation that directs the thoughts of an individual by developing boundaries. Basic research may promote general knowledge since accurate theories could be utilised to make decisions. Theories could assist a researcher if the theory is appropriate. Basic research may produce data that could assist the researcher to understand, describe, and forecast why a phenomenon occurs (Johnson, 2002: 5).

Applied research is described in the following section of the dissertation.

2.5.2 Applied research

Applied research is generally utilised to resolve a certain problem situation. Applied research is therefore research that could be utilised to attend to a current problem situation by virtue of the results of the research. The research problem is identified and selected on the basis of the realistic value the research may have in particular circumstances (Brynard & Hanekom, 1997: 5).

Johnson, (2002: 6) writes that the purpose of applied research is to resolve current problem situations or to produce data that could be utilised for a specific purpose. Researchers have a tendency to utilise applied research to produce data with which to develop public policies and programmes. Applied research is also used to evaluate existing public policies.

The general steps within the research process are identified in the following section.

2.6 The research process

The steps in the research process will be identified in this section of the dissertation.

Brynard & Hanekom, (1997: 8) write that the research process may include the following steps:

- (a) Identification of the relevant problem situation: This will explain the purpose of the research.
- (b) Formulation of the hypothesis: The formulation of the hypothesis could serve as a directive for the collection of the relevant data and may ultimately assist in solving the policy problem.
- (c) Deciding on the research methods to be utilised: Once agreement is reached concerning the research problem and the formulation of a hypothesis, applicable research methods and techniques are identified and selected.
- (d) Data collection: The subsequent step is to acquire data systematically. The researcher should ensure that the acquired data and information are related to the research problem.
- (e) Data analysis: The hypothesis is empirically tested by virtue of systematic and relevant processing, analysis of data and data interpretation.
- (f) Statements and conclusions: These should be formulated in correlation with the acquired data and may initiate a solution for the problem situation. Statements and conclusions should be based on valid arguments. Once the statements and conclusions are concluded, recommendations could be made regarding policies that may solve the problem situation.
- (g) Research report: The final step in the research process implies the preparation of the research report. In the research report the research problem is identified and explained, the data analysis is described and the research conclusions and recommendations are revealed and explained.

De Coning, (2000: 8) writes that scientists, in general, acknowledge the steps in the research process. The process of research provided is comparable to that of Brynard & Hanekom, (1997: 8), although the description of the field of study is also included and the finalisation of the research report is not mentioned. De Coning, (2000: 8) is of the opinion that the process of research may comprise the following: the definition of the problem, description of the field of study, data collection, which generally constitutes literature study and fieldwork, data analysis, which indicates the evaluation and interpretation of the information, and a conclusion and recommendation.

De Coning, (2000: 8) is further of the opinion that the basic steps in the research process could be compared to the steps within the policy analysis process.

Johnson, (2002: 7) provides a more comprehensive research process, although the provision of a research report is not included. The planning of the research process was not

included in the models of Brynard & Hanekom, (1997: 8) and De Coning, (2000: 8). Johnson, (2002: 7) is of the opinion that the research process may embody the following:

(a) Planning:

- (i) Identify the variables and research questions.
- (ii) Analyse the decision maker's requirements.
- (iii) Decide on the methodology to be utilised: this may include the selection of a valid research design and measures, the identification of an effective and efficient data-acquiring strategy, and the development of a relevant strategy for data analysis.
- (iv) Evaluate and test methodology.
- (v) Prepare a project plan that also refers to resource and time requirements.

(b) Doing:

- (ii) Collect accurate data.
- (iii) Analyse the collected data.
- (iv) Formulate the results of the data analysis.

(c) Reporting:

- (i) Identify and describe important findings.
- (ii) Recommend and describe the policy alternatives for possible implementation.
- (iii) Provide valid evidence to explain the policy recommendations.

Mouton & Marais, (1985: 33) include conceptualisation in the research process, which the other authors don't and in contrast with Brynard & Hanekom, (1997: 8), De Coning, (2000: 8) and Johnson, (2002: 7) policy recommendations are not included in the research process. According to Mouton & Marais, (1985: 33), the research process could include the following steps:

- (a) Identification and selection of the policy problem.
- (b) Formulation of the policy problem.
- (c) Conceptualisation.
- (d) Collection of relevant data.
- (e) Data analysis.

Brynard & Hanekom, (1997: 8) are the only authors that include the formulation of the hypothesis and the provision of a research report in the research process.

Descriptions and definitions of research methodology are provided in the following section of the dissertation.

2.7 A description of research methodology

This section of the dissertation is devoted to the definition and description of research methodology.

Research methodology could be described as the methods of collecting data. Research methodology implies that the researcher should think about the planning, formation and implementation of the research to consequently ensure that the research is truthful, objective and valid. Research methodology indicates the process of research applied. The researcher may have to consider certain aspects of the research project. These considerations could include the following:

- (a) Decisions that need to be taken during the research process.
- (b) The appropriate methods and techniques for data compilation and analysis.
- (c) The relation between the purpose of the research undertaken and the methods and techniques selected.
- (d) Factors influencing the process of research and its impact on the research methodology (Brynard & Hanekom, 1997: 28).

Johnson, (2002: 4) also defines research methodology as “a systematic process for gathering and interpreting data”. Research methodology may also be viewed as a systematic search for solutions to policy problems. This implies that the research methodology may be a guide in the decision-making process. The key aspect of research methodology is that it is a systematic process.

The Public Administration Dictionary, (1995: 81) defines and describes research methodology as follows:

- (a) “The systematic study of processes and principles that guide scientific investigation and research”.
- (b) “The study of the processes and principles that guide scientific investigation”.

- (c) “Research methodology is concerned with the process of acquiring policy-relevant knowledge (for example, through intuition, firsthand observation, or mathematical modelling) and not with the application of particular methods (for example, description, explanation, prediction) and techniques (for example, social indicators, correlation analysis, programme budgeting)”.

Mouton, (2001: 86, 98) indicates that practical research methodology comprises both literature study and field-work.

The research methods are an important element within research methodology.

2.8 Research methods

This section of the dissertation is utilised to describe two primary research methods that could be utilised in the research process, namely quantitative and qualitative methods of research.

Generally research methods could be related to the academic discipline within which the research project is carried out. Even so, it may be stated that quantitative and qualitative methods are relevant to all scientific research (Brynard & Hanekom, (1997: 29).

Mouton & Marais, (1985: 157), Johnson, (2002: 5) and Mouton, (2001: 95), also identify two general methods applied in the research process, namely quantitative and qualitative methods of research.

Quantitative research methods are defined in the next section of the dissertation.

2.8.1 Quantitative methods of research

The quantitative methods of research could be related to analytical research, with the intention to make a general statement. In quantitative research numbers are allocated to variables and results. This implies that data in quantitative research is compiled by virtue of “counting” and “measuring” results or findings. The assumption is that quantitative research should be able to produce “warrantable” data as results are calculated and indicated as numbers. Quantitative research may relate to the following techniques: observation, pilot studies and questionnaires (Brynard & Hanekom, 1997: 29).

Mouton & Marais, (1985: 157) write that quantitative research may be described as the method in research that is more formalised, explicit and controlled and generally more relevant in the scientific sciences.

The Concise Oxford Dictionary (1982: 844) defines quantitative as “measured, or measurable by, or concerned with, quantity of or based on the quantity of syllables”.

Bailey, (1987: 61) confirms the statement of Brynard & Hanekom, (1997: 29) and is of the opinion that quantitative research refers to research where the variables and results are given numerical values or attributes.

Qualitative research may also be relevant to all scientific research.

2.8.2 Qualitative methods of research

This section of the dissertation is devoted to the definition and description of the qualitative method of research.

The qualitative method of research could indicate research that produces descriptive data. This could include participants written or spoken words. Generally no numbers are allocated to variables and results. The key element of qualitative research is to analyse a problem situation from the perspective of the participants. This implies that the views and opinions of the participants are the empirical point of departure. Qualitative research utilises the practical experience and knowledge of participants to solve problem situations. Qualitative research methods may include the following techniques: case studies, in-depth interviews with key participants, observation, questionnaires and the study of documentation (Brynard & Hanekom, 1997: 29).

Mouton & Marais, (1985: 157) write that the qualitative method of research is research where the procedures are not so strictly formulised or explicit. Qualitative research may utilise philosophical information and data.

For an extended period of time researchers believed that adequate research should include the application of quantitative methods. Researchers are now starting to realise that not all research problems can be explained or analysed in terms of numbers. More researchers are now acknowledging the appropriateness of qualitative research. The practical experience and knowledge of experts may provide a researcher with adequate information and data to

attend to a problem situation. The research questions and the type of data required may establish whether a qualitative research approach is appropriate (Johnson, 2002: 5).

Bailey, (1987: 60) and Johnson, (2002: 5) confirm the viewpoint of Brynard & Hanekom, (1997: 29) that the qualitative method of research indicates research where generally no numbers are allocated to variables and results.

The following section of the dissertation identifies some of the research techniques most frequently applied in the research process.

2.9 Research techniques

This section of the dissertation is utilised to identify some of the techniques most frequently utilised in the data collection process.

Brynard & Hanekom, (1997: 30) are of the opinion that the following could be some of the techniques most frequently utilised in the research process:

- (a) Review and study of relevant literature.
- (b) Interviews.
- (c) Questionnaires.
- (d) Observation.

Johnson, (2002: 5, 75) identifies the following techniques that are frequently applied in the research process:

- (a) Experiments.
- (b) Observation.
- (c) Study of relevant literature.
- (d) Questionnaires.
- (e) Interviews.
- (f) Focus groups.

Bailey, (1987: 104, 173, 213, 238, 289, 316) identifies the following research techniques that are frequently utilised:

- (a) Questionnaires.
- (b) Interviews.

- (c) Experiments.
- (d) Observation.
- (e) Study of literature.
- (f) Simulations.

The methodology of a dissertation should be described and explained.

2.10 The research methodology applied in the dissertation

The research methodology utilised in the dissertation is described and explained in this section.

For the normative study of the dissertation, local and international books were utilised. The researcher also utilised the relevant Acts, official documents that were published by the South African National Roads Agency Limited (SANRAL), departmental reports and documents that were developed by or on behalf of the National Department of Transport. In some instances dictionaries were utilised to define certain concepts.

For the empirical study of the dissertation, the researcher conducted interviews with key personnel of SANRAL, because of their knowledge, experience and expertise regarding SANRAL, the national road policies and the national road network. These interviews may be viewed as being empirical as it produces relevant data based upon the knowledge and personal experiences of the participants involved.

The interviews with the SANRAL employees and the survey of the literature enabled the researcher to attend to and complete the normative and empirical research required for the dissertation. It is relevant to indicate that the availability of documents regarding SANRAL's toll road policies is very limited.

This dissertation is directed towards SANRAL and its toll road policies with particular reference to the SANRAL toll road policy alternative. As this research is unique, the researcher has to develop a specific policy analysis process that is relevant to the analysis of SANRAL's toll road policies.

Regarding the type of research undertaken, it may be stated that the dissertation could be seen as being applied research, due to the fact that the intention of the dissertation is to attend to a current and particular problem situation.

With regard to research methods, it could be stated that the qualitative method of research is utilised in the dissertation. The research produced descriptive data as interviews were conducted with experts. No numbers were allocated to variables and results on advise of the knowledgeable participants. The participants were of the opinion that the research is not related to quantitative research due to the kind of data required. They advised that it is not realistic to allocate numbers to variables and results due to the complexity of toll road policies.

The research techniques applied in the dissertation were limited to the study of relevant literature and the conducting of interviews with experienced and knowledgeable participants.

The problem statement of this dissertation is described in the following section.

2.11 Problem statement

The problem statement in research may be of importance and in this section of the dissertation the problem statement is identified and described.

SANRAL has established that South Africa requires a national road network of approximately 20 000 kilometres to serve the transport demand of the public. To develop, operate and maintain a national road network of approximately 20 000 kilometres may cost close to R30 billion. SANRAL has accepted the fact that funds exclusively received from the National Treasury are inadequate to meet the demand for the development and maintenance of national roads (The South African National Roads Agency Limited: Declaration of Intent, 2005 – 2008: 16, The South African National Roads Agency Limited: Annual Report, 2005: 5).

The Non-toll national roads in South Africa are financed by virtue of the funds made available by the National Treasury. However, in South Africa, approximately 60% of the Non-toll roads are older than its 20-year design life. In practice approximately 65% of the funds made available by National Treasury is being utilised to only maintain the Non-toll national road network (The South African National Roads Agency Limited: Annual Report, 2005: 22).

SANRAL has accepted the fact that additional funds are required to effectively and efficiently build, operate and maintain national roads in South Africa. The funds received annually from the National Treasury are not sufficient to provide for the required national road network in South Africa (The South African National Roads Agency Limited: Declaration of Intent, 2005 – 2008: 25).

Currently road utilisation is increasing annually whilst SANRAL's road funding is declining. SANRAL receives an annual amount of approximately R1,4 billion for the development, building and maintenance of the national road network from the National Treasury. In practice this implies that SANRAL may only be capable to maintain approximately 40% of the Non-toll national road network. SANRAL has calculated that the backlog could be R11,5 billion in five years time (The South African National Roads Agency Limited: Declaration of Intent, 2005 – 2008: 35).

Finance from the National Treasury to develop, build and maintain national roads have significantly been reduced over recent years. SANRAL is unable to develop and maintain a national road network without the utilisation of alternative funding mechanisms. The SANRAL toll road policy is an innovative policy for the funding, development, building and operating of national roads in South Africa. SANRAL toll roads are funded by means of loans raised directly by SANRAL through bonds issued from the capital markets (The South African National Roads Agency Limited, 2002: Horizon Twenty Ten: 25).

The survey of the literature and the interviews conducted with relevant personnel of SANRAL indicate that SANRAL may not have the necessary funding to provide the Republic of South Africa with the required national road network of approximately 20 000 kilometres which could cost R30 billion to plan, design and construct. The traditional funding received from the National Treasury annually seems inadequate to enable SANRAL to provide the required national road network in South Africa.

The aim of this dissertation is to analyse whether the SANRAL toll road policy is an effective and efficient alternative in developing and providing the required primary national road network in South Africa. The reason being that SANRAL is challenged to provide and develop a primary national road network that could meet the demands of the public.

Since the problem has been stated is it of importance to identify and describe the research objectives of this dissertation.

2.12 The research objectives

The objective with this dissertation is to prove that the SANRAL toll road policy alternative could be effective and efficient in enabling SANRAL to develop, build, operate and maintain the required primary national road network in South Africa necessary to meet the growing demand for national roads by the road users.

A further objective of this research is to identify and analyse the possible other policy alternatives SANRAL has in establishing the primary national road network in South Africa.

Following the statement of the research objectives is it necessary to identify and describe the relevant research questions.

2.13 The research questions

The research question for the purpose of this study is to verify whether the SANRAL toll road policy alternative could effectively and efficiently enable SANRAL to develop and maintain the required primary national road network necessary to provide in the needs of the public of South Africa.

A second research question is to identify and describe the other possible policy alternatives, which SANRAL could select in attempting to develop and maintain the necessary primary national road network in South Africa.

Understanding and continuously focussing on the problem statement, research objectives and research questions may be seen as an important priority of research.

The conclusion of this chapter is described in the following section.

2.14 Conclusion

This chapter of the dissertation is utilised to describe and explain the research methodology applied in the dissertation. The following is described and explained: the importance of research, descriptions of research, principles for researchers, types of research, the research process, research methodology in general, research methods, research techniques, and the research methodology applied in the dissertation. This chapter is further utilised to state and describe the problem statement, the research objectives and research questions.

After describing the research methodology utilised in the dissertation is it necessary to define and describe Public Administration in Chapter 3.

CHAPTER 3

PUBLIC ADMINISTRATION

3.1 Introduction

This research is undertaken within the academic discipline of Public Administration. For this reason it is of importance to define and describe Public Administration. Furthermore, the concepts “effectiveness” and “efficiency” will be defined, as it is relevant to this research. The South African National Roads Agency Limited (SANRAL) is a public company and could therefore also be related to Public Administration. The possible relation between SANRAL and Public Administration is also briefly explained in this chapter of the dissertation. Lastly, this chapter is utilised to describe the relation between Public Administration and public policy analysis.

Public Administration as a scientific discipline is defined and described in the following section of the dissertation.

3.2 A description of Public Administration

Public Administration as a scientific discipline is defined and described in this section of the dissertation as this research is conducted within the Public Administration discipline.

Public Administration could refer to the actions of a governmental institution in executing the public policies declared in the Acts. Public Administration could also be seen as a field of scientific study through which public officials are prepared and developed for managerial positions. It may also be possible that Public Administration comprises all the required actions necessary for the implementation, accomplishment and enforcement of the declared public policies by the relevant public institutions. It could also be described as a systematic appliance of the law. Public Administration may also be involved with which public policies are implemented and executed to ensure success, and how. The progress in modern sciences and the impact thereof could have contributed to the development of Public Administration (Pattanayak, 2000: 276).

Public Administration comprises the generic functions necessary to maintain a government institution. This implies that six groups of generic functions that may be utilised before or after the activities have been undertaken to provide a product or a service. These functions

include: policy-making, financing, organisation, personnel provision, developing and improving work procedures, and control. These generic functions are relevant to the work undertaken by the different public institutions (Cloete, 1988: 3).

Hanekom, (1987: 1) confirms the statement of Cloete, (1988: 3) and places the generic functions in the following context. Public Administration embodies six groupings of co-dependent functions, namely: policy-making, organising, financing, personnel provision, formulating work procedures and controlling. These administrative functions are necessary for goal attainment and may be referred to as the enabling functions for goal attainment. Public Administration functions within a political milieu and is only applicable once the legislator has determined that a particular policy should be implemented. The output of the political process concludes in legislation and indicates the preferred course of action. The preferred course of action or policy is an input towards the public administrative process, which transforms it into policy programmes. Policy-making may be viewed as the enabling function as it provides a framework for activities to be undertaken.

Nigro, (1965: 25) is of the opinion that Public Administration:

- (a) Could be a joint group endeavour in a public milieu.
- (b) Relates to all three branches of government, namely executive, legislative and judicial and its relationships.
- (c) May be essential in the generation of public policy and is consequently part of the political process.
- (d) Is more significant than and also dissimilar to private administration.
- (e) As a science has been affected by the social sciences.
- (f) Is intimately related with various private groups and individuals in providing products and services to society.

Public Administration is the achievement of politically formulated objectives. Public Administration is broader than a technique and the effective and efficient execution of policy programmes. Public Administration is also concerned with public policy, as the bureaucracy is a main policy-maker in government. Public Administration is further concerned with the generation of the policies by which governmental agencies are directed, and is also involved with the execution of policies by virtue of practical programmes. Subsequently, Public Administration is the "action" part of government, providing public services, products and programmes. Public Administration is practical as it is concerned with joint efforts to attain widespread goals with progressively more complicated techniques. Public Administration is also intellectually challenging since a great deal depends upon the intricacies it contains:

cultural diversity, differences in the values of various communities and particularly the balance of variables required to accomplish agreement for a specific purpose at a particular time and with a specified supply of resources. Public Administration is directly associated with several social sciences, including Political Science, Economics, Sociology and Psychology. Public Administration should be effective, efficient and practical to resolve public problems and to achieve societal goals. Public Administration should also be investigative and innovative in exploring enhanced methods based upon a broader consideration of what is implied with effective and efficient group action (Dimock & Dimock, 1969: 3, 7, 12, 13).

Effectiveness is a measurement within the public policy analysis process conducted in the following chapter and is defined in the next section of the dissertation.

3.3 Effectiveness

Effectiveness is defined in this section of the dissertation.

Effectiveness is a criterion in terms of which a policy alternative is selected and recommended if it results in the attainment of a valued outcome. Effectiveness refers to a public institution's capability, utilising a limited quantity of resources, to obtain fixed objectives as determined by a specified criteria. Effectiveness also refers to the extent to which a policy programme is accomplishing or failing to accomplish its predetermined objectives. Effective institutions have the capability to foresee change, to communicate this change to the parties affected, to adjust activities, to expect and evade mistakes, and to implement the required adaptations (Fox & Meyer, 1995: 41).

The Concise Oxford Dictionary (1982: 308) describes effectiveness as "having an effect; powerful in effect; striking, remarkable, actually usable".

Efficiency is also a measurement within the policy analysis process conducted in this dissertation and is therefore defined in the following section.

3.4 Efficiency

Efficiency is defined in this section of the dissertation.

Efficiency in terms of the conventional view of Public Administration is the main objective of administrative science. The term invokes images of comparisons of costs with the value of

the outputs, profit maximisation and cost minimisation. These images infuse the existing working environment of public sector managers, indicating the scarcity of available resources comparative to public needs. In general terms efficiency refers to a criterion in terms of which a policy alternative is selected or recommended if it results in a superior ratio of effectiveness to cost. Efficiency is a relative calculation of the relationship between resource utilisation and impacts. In general the value of the impacts from an expenditure of resources should be better than the value of the resources utilised (Fox & Meyer, 1995: 41).

The Concise Oxford Dictionary (1982: 308) describes efficiency as “productive of effect, competent, capable”.

For the purpose of this dissertation it is of importance to briefly describe the relation between SANRAL and Public Administration.

3.5 SANRAL and Public Administration

This section of the dissertation is utilised to briefly describe the relation between SANRAL and Public Administration.

It is SANRAL's objective, as a public institution, to develop and maintain an effective and efficient network of national roads to serve the citizens of South Africa. To develop such a network of national roads will require substantial amount of funds. SANRAL's main problem is to provide and maintain a primary national road network with the limited amount of funds available. For various national roads, available funds are only adequate to attend to the necessary maintenance work to ensure the good quality of these roads (Van Niekerk, 2006: Interview).

The task entrusted to SANRAL, as a public company, was to provide and control a world class, sustainable primary national road network as cost-efficiently as possible, in order to encourage economic growth and develop the quality of life of all South Africans. Underlying this task was the identification that transport plays a vital role in the economic and social progress of any country (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 6).

SANRAL was established in terms of the *South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998)*. In terms of Section 3 of the last-mentioned Act SANRAL is a public company.

Pattanayak, (2000: 276) writes that Public Administration could refer to the actions of a governmental institution in executing the public policies declared in the Acts.

Dimock & Dimock, (1969: 3) is of the opinion that Public Administration is further concerned with the generation of the policies by which governmental agencies are directed.

From the above could it be deducted that SANRAL as a public company may be seen as a public institution and may therefore be studied within the discipline of Public Administration.

3.6 The relation between Public Administration and public policy analysis

Brynard, (1997: 145) indicates that public policy analysis is a step within the policy-making process of Public Administration.

Dunn, (1981: 36) writes that public policy analysis as an applied science is not only related to social and behavioural sciences, but also closely related to Public Administration.

Hanekom, (1987: 65) confirms the opinion of Brynard, (1997: 145), that public policy analysis relates to the generic policy-making function of Public Administration. Hanekom, (1987: 65) writes that by utilising public policy analysis it is possible to promote rationality in the public policy-making process.

De Coning, (2000: 6) is also of the opinion that public policy analysis is an integrated component of the public policy-making process.

In the following section attention is given to the conclusion of this chapter.

3.7 Conclusion

In this chapter of the dissertation attention is given to the definition and description of the concept Public Administration. The concepts of effectiveness and efficiency is relevant to this research, as it serves as the measurements utilised in the forthcoming public policy analysis process and is therefore defined in the chapter. The relation between Public Administration and SANRAL, as well as the relation between Public Administration and public policy analysis is described in this chapter.

Chapter 4 of the dissertation is dedicated to the definition of the concepts “public policy” and “public policy analysis”. Chapter 4 is also utilised to describe the public policy analysis process and the limitations and advantages of public policy analysis.

CHAPTER 4

PUBLIC POLICY AND POLICY ANALYSIS

4.1 Introduction

This chapter of the dissertation is devoted to the following: defining the concepts “public policy” and “public policy analysis”, the advantages and limitations of public policy analysis, identification of the public policy analysis process and the role of goals and objectives in the public policy analysis process.

The enhancement of the well-being of the general public depends on the public policies implemented by the policy-makers, the available funds, the policy-maker’s perception of the public inconvenience and demands and the nature of public policy. The policy analyst has to utilise suitable policy analysis models for analysing policies and its consequences. The models used in policy analysis should include all the variables, which may affect the result of the analysis. If the policy analyst take cognisance of these variables, it is possible to enhance rationality in policy-making. The policy analyst should also analyse the policies itself and the related policy results. This could contribute towards public policies based upon scientific information rather than policies being made indicating the personal opinions and interpretations of the analyst and the decision-maker (Hanekom, Rowland & Bain 1987: 25).

To enable the analyst to analyse the service delivery and products of the governmental institutions effectively, the comprehensive practice of public administration should also be taken into consideration. Public policy as the distribution of value, as purposeful task or as a framework for relations should also be included in the analysis. Presently efforts are being made to analyse and describe public policy with the purpose to establish its content and consequences. The importance of public policy analysis is not only relevant to public officials. Economists, industrialists, anthropologists, psychologists, geographers and others are also aware of public policy and may analyse that aspect of the policy, which is relevant to a certain field (Brynard, 1997: 148 -149).

Hanekom, (1987: 65) indicates that the quality and ultimately the effectiveness of policy-relevant information depend on a scientific policy analysis process of current or planned policies. The decision-maker should be provided with information regarding the causes, consequences and costs of a policy to enhance rationality in public policy-making.

The opinions of some scientists are that it has become a universal practice to employ a policy analyst to execute the policy analysis function. The policy analyst is provided with all

relevant policy data in order to function effectively. The policy analyst should utilise a multidisciplinary and interdisciplinary approach by integrating various models, techniques and knowledge from diverse disciplines (Hanekom, 1987: 72).

Definitions of public policy are provided in the following section.

4.2 Definitions of public policy

This section of the dissertation provides definitions of public policy.

The survey of the literature indicates that there are various definitions for the term public policy. Some of these definitions are provided in this section.

Parsons, (1995: XV) writes that public policy could be described as “the public and its problems”. Public policy is concerned with how problems are defined and included on the policy agenda. Public policy is also the study of how, why and to what effect governments implement certain action and inaction. Public policy is also concerned with “what governments do, why they do it and what difference it makes”.

Public policy is anything governments select to do or not to do. Governments attend to various issues and therefore public policies control behaviour, arrange bureaucracies, allocate benefits and extort taxes (Dye, 1995: 2).

Public policy is a fairly constant and purposeful course of action undertaken by an authority with regard to a problem situation. Public policy is also concerned with what is, in fact, being done in practice and does not only focus on what is planned or anticipated (Anderson, 1997: 8, 9).

Public policy is “a desired course of action and interaction which is to serve as a guideline” in the allotment of resources required to attain public goals, determined and made public by the relevant legislator (Hanekom, 1987: 7).

Nagel, (1991: 3) is of the opinion that public policy refers to governmental decisions intended to deal with diverse societal problems, such as problems associated with foreign policy, environmental preservation, crime and unemployment.

Public policy could be described as “a purposive course of action which government takes (or sometimes does not take) to achieve a purpose or set of goals” (Garson & Williams, 1982: 405).

Denhardt & Hammond, (1992: 46) write that public policies are statements of goals and intentions regarding a specific problem or problems. Governmental institutions deal with particular societal problems by formulating public policies. These problems could be noticeable, for example law enforcement, or it could be a less visible matter, such as the mechanism to process tour vouchers.

Some scientists define public policy as a statement of intent. Public policy stipulates the fundamental principles to be followed in accomplishing particular goals. Public policy reflects the values and ethics of society and is usually personified in the managing of important programmes. Public policy is generally communicated by virtue of a formal policy statement, for example a White Paper, even though its explanation is frequently communicated verbally (De Coning, 2000: 3, 4).

The above definitions of public policy indicate that scientists differ regarding the specific interpretation of the concept of public policy. The above-mentioned definitions of public policy also indicates that governmental institutions formulate public policy, which could be a preferred course of action or inaction, to obtain certain goals, which may provide a solution to a particular societal problem situation.

For the purpose of this dissertation is it important to identify the definition of public policy analysis.

4.3 Definitions of public policy analysis

The different definitions of public policy analysis are identified in this section of the chapter.

The survey of the literature indicates that scientists have different interpretations of the concept public policy analysis. Some definitions of public policy analysis are provided in this section.

Hanekom, (1987: 72) writes that public policy analysis is an endeavour to establish the costs, benefits and results of public policy and is generally applied for scientific, professional or political reasons. Scientifically, to establish the costs and results, professionally, to formulate the most appropriate policy alternatives in dealing with policy problems, and

politically to warrant that the required objectives are achieved. Hanekom, (1987: 65) further writes that policy analysis is utilised to produce and transform data relevant to specific policies into a format that could be used to address the inefficiencies relating to these policies.

Nagel, (1991:3) is of the opinion that public policy analysis usually indicates the calculation of which policy alternative is most effective and efficient in attaining a particular goal, based upon the relationships amongst the policy alternatives and the goal. Policy analysis techniques are utilised in calculating these relationships and recommending which policy alternative is the most effective and efficient.

It is also possible to define public policy analysis as client-related advice with regard to public decisions and determined by public values (Weimer & Vining, 1999: 27).

Policy analysis is a practical social science that utilises various methods of inquiry to generate and transform policy-related information that could be used in a political milieu to solve policy problems. The range and methods of policy analysis are to some extent descriptive regarding the causes and consequences of policy and, accurate information is important in considering public problems. The scope of policy analysis is broader than only the generation of data; the policy analyst should also search for information regarding the values and preferable policy alternatives (Dunn, 1981: 35).

Lynn, (1980: 4) writes that policy analysis is still in the process of being defined. It could amalgamate with simultaneous developments in the social sciences that highlight the significance of public policy content and formulation. Policy analysis could be defined as the analysis of public policy problems with the intention of clarifying issues, alternatives, and policy results and consequently enhancing the foundation for policy decisions.

Garson & Williams, (1982: 417) write that the purpose of policy analysis is to promote rationality in public policy-making. Understanding how the policy analysis techniques can bond with political decisions is generally the most vital contemplation in programme evaluation, cost-effectiveness analysis and rational goal identification for public programmes. Garson & Williams, (1982: 417) further state that policy analysis determines the consequences of public policy on its target groups, which could include individuals, relevant groups, institutions and society as a whole. The policy is analysed in terms of the goals that the policy is supposed to obtain. The policy analyst, by virtue of a rational analysis, may support the decision-maker in selecting the correct policy alternative, which is also effective.

Correct and impartial information regarding the probable results of policies could be the most effective approach in enhancing the political decision process.

Policy analysis has a broad definition. It is appropriate in understanding the policy process and that policy selection could be done by virtue of various valuable perspectives. Policy analysis incorporates rationality and rigorous methodology (Heineman, Bluhm, Peterson & Kearny, 1997: 5).

Parsons, (1995: XV, XVI) writes that public policy analysis is an approach to public policy that intends to incorporate and utilise models and research from other disciplines that are related to policy and problem solving. Policy analysis is a practical study and its constituent cannot be limited by disciplinary boundaries.

Public policy analysis could be described as “the systematic analysis of the dimensions and variables influencing public policy” and is an essential component of policy management. Policy management is a purposive attempt to deal with policy matters and processes (De Coning, 2000: 3).

The above-mentioned definitions of public policy analysis indicate that scientists are using different approaches and viewpoints in describing the concept of policy analysis. They also indicate that the policy analyst may have to produce rational information regarding the efficiency with which possible policy alternatives could obtain the specified goals.

The possible advantages of public policy analysis are described in the following section.

4.4 The advantages

The literature survey indicates that public policy analysis may have advantages with regards to public policy. The advantages of public policy analysis are identified and described in this section.

Hanekom, (1987: 65) writes that the policy analyst, by virtue of the policy analysis process, can provide the decision-maker with data regarding priorities that serve as a foundation for the policy decisions.

Policy analysis could enhance the selection of rational choices in public policy. Policy analysis presents a foundation for considering the possible results in selecting a policy alternative and can assist the decision-maker in promoting the common good. Policy

analysis could also assist the decision-maker to consider the importance of values, interests and political considerations in selecting a policy alternative (Hanekom, 1987: 67).

Hanekom, (1987: 67, 68) further writes that policy analysis produces information that could be utilised to distinguish between important and less important issues. By identifying the societal changes and comparing the predicted performance against the results obtained, policy analysis is valuable in determining whether a selected policy alternative is effective and efficient. If the policy alternative is not functioning adequately, the policy analyst should be able to identify the facet of the policy that is not functioning appropriately. Policy analysis evaluates the objectives, resources and policy alternatives, which makes it easy to identify errors by utilising the historical framework.

Garson & Williams, (1982: 406) write that particular steps in the policy analysis process, for instance comparing costs to benefits and performance measurement, cannot be achieved without analysis. They state the following reasons for policy analysis:

- (a) To ensure that the predicted results can be obtained.
- (b) To observe a difficult problem in such a manner that the most effective and efficient policy alternative may be identified, selected and implemented.

However, the policy analyst should not over-emphasise cost-benefit analysis in the selection of a policy alternative, but the effective and perceptive use of policy analysis can enhance the foundation on which public policy decisions are made (Lynn, 1980: 5).

Public policy decisions are rarely made on the foundation of sufficient thought regarding the appropriate role of the Government or contemplation of what social justice needs. Public decisions are generally based upon incomplete, insufficient and ineffective information. Policy analysis can improve the quality of public decision-making, because it makes difficult problems more understandable, the variety of policy alternatives is more suitable and the social impact of all policy alternatives is more apparent (Lynn, 1980: 5).

Policy analysis that includes goals, policies, relations and conclusions generally has four uses:

- (a) Making decisions.
- (b) Affecting decisions.
- (c) Forecasting decisions.
- (d) Measuring decisional tendencies (Nagel, 1991: 10).

All four of the above uses are relevant to enhance public policy and to acquire a better fundamental understanding of public policy issues. Public policy is promoted if:

- (a) Policy decisions are more appropriate, effective and efficient.
- (b) The required social behaviour is better promoted.
- (c) The decisions of the public are more effectively forecasted to enable planning accordingly.
- (d) Decisional tendencies, sensitivity and values are better calculated in analysing a variety of policy alternatives (Nagel, 1991: 11).

The fundamental understanding of public policy issues is also affected by the above-mentioned four uses, because:

- (a) In order to enhance effective public policy decisions, the policy analyst is encouraged to study the reasons and consequences of public policy and the relationships amongst policies and goals.
- (b) Promoting the effective influence of public decisions, the policy analyst is encouraged to study the important relationship between changed behaviour and altering the benefits and costs.
- (c) Predicting policy decisions usually require superior knowledge regarding the fundamental relations within public policy.
- (d) A propensity-measuring model is, in practice, also a public policy analysis predictive model (Nagel, 1991: 11).

The difference between the objective of the decision-maker and the real consequences of a policy alternative is a vital predicament in the policy-making process. This could result in great financial losses, because funds are being spent in an ineffective and inefficient manner. Fortunately, the policy analyst is equipped to develop techniques to better predict the consequences of a public policy and subsequently the selection of an efficient policy alternative is promoted. Superior selection of effective and efficient policy alternatives also results in better utilisation of public funds (Bresnick, 1982: 165).

The above-mentioned advantages of public policy analysis imply that the policy analyst could be able to produce information regarding possible public policy alternatives to enable the decision-maker to select an effective and efficient policy alternative to address a particular societal problem. Public policy analysis therefore may promote the selection and implementation of rational policy choices.

Although public policy analysis could lead to better decision-making in the public sector, it also has its limitations.

4.5 The limitations of public policy analysis

The literature survey indicates that public policy analysis also has its limitations. Some of these limitations are described below.

Dunn, (2004: 58) writes that, in theory, policy analysis has the mechanisms for ensuring superior public policies. However, in practice policy analysis has the following limitations:

- (a) The utilisation of policy analysis is generally indirect, delayed and general. Policy analysis is rarely utilised directly as a foundation for enhancing particular policy decisions regarding the allotment of public funds. On its own, policy analysis is seldom significant if not amalgamated with other sources of data regarding a policy issue. The indirect and general utilisation of policy analysis is comprehensible, because the policy-making process is a complicated process and comprises various phases.
- (b) Policy enhancement is morally controversial: with policy analysis, the basis of what represents a policy enhancement depends on the political, ideological and moral viewpoints of the stakeholders. Generally objectives, such as effectiveness and efficiency are viewed to be universally accepted. In practice it relates to ideological and moral issues, as it implies the selection of several values over others.
- (c) Policy analysis could also be ineffective if the policy analyst seeks to promote his personal status or the interests of the employer (Dunn, 2004: 58).

Hanekom, (1987: 71) writes that the purpose of policy analysis is to enhance the development of rational, appropriate, effective and efficient public policies to promote the common good. Policy analysis could enhance public policy on condition that the data produced is conveyed to the decision-maker, and the decision-maker should actually utilise this information in selecting a policy alternative. Hanekom, (1987: 71) is also of the opinion that the following constraints could limit the results of the policy analysis process:

- (a) Frequently societal problems are described in relative terms, which may cause difficulties in developing criteria to address these problems.
- (b) The political considerations could limit the impact of policy analysis if the decision-maker decides to reject the results of the analysis and proceeds only in terms of what is politically desirable.

- (c) Policy analysts could be biased regarding the relevance, importance and consequences pertaining to a particular policy alternative, which may affect the value of the analysis.
- (d) Analysis is unproductive if it merely focuses on the outcome of a particular policy alternative without considering what the policy result ought to be. This could create a scenario in which the desired policy outcome is not taken into consideration when the policy results are conveyed to the decision-maker.
- (e) Analysis is at all times incomplete, as no adequate technique has yet been created to predict the future and public policies are future-orientated. The fact is that doubt will forever be part of the policy analysis process.
- (f) It is no warranty for policy enhancement. Statement of the results of the analysis, the acceptance thereof and the implementation of the policy alternative by the decision-maker is the only confirmation of the value of the policy analysis.

Heineman, Bluhm, Peterson & Kearny, (1997: 61, 62) write that policy analysts have identified and developed various effective techniques in producing information, analysing relations, and describing policy alternatives. Nevertheless, policy analysis has its limitations due to the following:

- (a) Decision-makers frequently have to deal with too much information, particularly when sensitive matters are being dealt with. The decision-maker can be overwhelmed with studies and proposals from numerous competing sources. The consequence could be that the decision-maker senses added security in depending on less rational and more personal means in attaining a resolution.
- (b) Utilisation of policy analysis mainly for supporting previously implemented policies appears to be a reality in the political environment.
- (c) When the decision-maker is an elected official, other factors could be considered, such as the popularity of the policy with the voters and personal occupation goals, in addition to the information produced and transformed through policy analysis.
- (d) Analysts can supply valuable data regarding a specific policy alternative, but provide limited direction on the implementation of the policy. Some policy analysts have in the past suggested policy alternatives that are impractical and unworkable. Therefore, policy analysts should also consider the implementation issues, such as programme management, operation and administration.

Roux, (2000: 122 - 124) indicates that the policy analyst should take cognisance of the following constraining factors regarding policy analysis:

- (a) *Budgetary constraints*: The most excellent policy alternative may look positive in theory, but could be limited by practical realities. As government budgets are generally inadequate to gratify all the demands of the public, the policy analyst should select objectives that are constructive and also practical.
- (b) *Political constraints*: Politicians could be more concerned with political party interests and select a policy alternative that is not appropriate for the general public.
- (c) *Institutional constraints*: Unproductive institutional structures and inadequate human resources could hinder the practical implementation of a specific policy alternative. The policy analyst should make provision for institutional insufficiency when formulating goals, objectives and policy alternatives.
- (d) *Inadequate information*: In certain circumstances, confidential data that is relevant to the policy analysis may not be provided to the policy analyst. Insufficient data limits the analyst's capability in identifying effective and efficient objectives and policy alternatives.
- (e) *Legal constraints*: Governmental legislation could also limit the attainment of objectives. It is therefore sensible that the policy analyst should identify and study the relevant legislation within which the goals, objectives and policy alternatives can be identified and developed.
- (f) *Information overload*: Effective and efficient policy analysis depends on the sufficient availability of policy-related data. The reality is that excessive data may also limit the effectiveness of the analysis as it may have a negative impact on the purposive understanding and classification of information, making it difficult for the policy analyst to formulate and develop relevant objectives and policy alternatives.
- (g) *Fear of change*: Long-established government policies may result in public officials becoming so attached to current programmes, that they are hesitant to accept new policy alternatives. It is advisable that the policy analysts therefore promote less extreme policy objectives and alternatives and implement it incrementally.
- (h) *Over-quantification*: Policy analysis generally represents the quantification of information and the utilisation of econometric models. Nevertheless, the policy analyst should realise that the social demands and values of the general public cannot at all times be calculated entirely in quantitative terms. Various policy matters can be better attended to by applying general knowledge and decent judgement than by uncontaminated mathematical techniques and models. This implies that when the policy analyst identifies, develops and selects the criteria for formulating objectives and policy alternatives, it is advisable that the policy analyst should utilise qualitative techniques in determining effective and relevant information.
- (i) *Subjectiveness*: The policy analyst must ensure that the final policy recommendation is not affected by personal bias and preference. The policy analyst should be dedicated to

impartiality and objectivity in addressing policy problems and formulating objectives and policy alternatives.

- (j) *Inadequate satisfaction of different demands*: Generally it is problematical to stipulate public issues in absolute terms. Public issues are often multifaceted and relates to other important public issues. Solving one public problem may affect other public concerns unconstructively.

Hanekom, (1987: 73) writes that policy analysis cannot address all the deficiencies in public policy, because of several restraints, such as complicated problems, excessive costs, public acceptance, unavailability of data and political contemplation. The result is policy recommendations based upon incomplete information. Even so, by virtue of policy analysis the decision-maker is empowered with information regarding public policy priorities, certainties and uncertainties.

From the above it is possible to state that public policy analysis has a few limitations that could limit the value of the policy analyst's work. It is of importance that the policy analyst takes cognisance of the limitations of policy analysis when identifying and developing policy goals, objectives and alternatives to ensure that the policy analysis is practical and of value to the decision-maker.

The public policy analysis process is described in the following section.

4.6 A description of the public policy analysis process

The purpose with this section is to identify and describe the procedures within the policy analysis process. Some scientists refer to these procedures as the methodology of policy analysis.

The word analysis is derived from a Greek word, which implies the separating of a component into its elements. Scientists in policy analysis generally describe the components of the policy analysis process as a cycle of procedures that may include the following: identify and define the problem, determine the criteria for the analysis, identify and develop policy alternatives, analyse the policy alternatives, select the most effective and efficient policy alternative, implement the selected policy alternative and evaluate and monitor policy results. The policy analysis process generally commences with the identification and definition of the policy problem and the subsequent steps can be explained as resolving the policy problem. Identifying and defining the policy problem is improperly viewed to be the less problematic step in the policy analysis process. In practice, the policy analyst could find

it very complicated and time-consuming in attempting to identify, define and explain the policy problem effectively. The function of identifying, defining and explaining the policy problem is significant in establishing the objectives and techniques that could be utilised in analysing the effectiveness and efficiency of policy alternatives (Weimer & Vining, 1999: 256).

The policy analyst should realise that the procedures in policy analysis, which include the identification and defining of the problem, formulation of the objectives and the identification and development of policy alternatives, are not a linear sequence of procedures, but are rather an integrated process of analysis. Effective policy analysis seldom occurs in an uncomplicated manner, from the identification of the policy problem to the selection and subsequent implementation of the chosen policy alternative. Policy analysis is rather an integrated process because the policy analyst's perspective and knowledge of the problem changes and expands. It may be stated that the process of effective policy analysis is never finalised due to the ever-changing demands of the general public and environmental issues. If the policy problem is identified and defined and the objectives determined, the policy analyst can proceed with the identification and development of the policy alternatives. Policy analysts generally utilise models as mechanisms to determine the fundamental elements of the policy problem (Roux, 2000: 132).

The policy analysis process has procedures that provide considerable direction to the policy analyst and the policy analysis process requires being adapted to effectively analyse a particular problem situation. Regularly, the policy analyst has to depend to some extent, on intuition and judgement to successfully attend to a policy problem. What this entails, is that the knowledge and judgement of the policy analyst could frequently be of more value than the methodology of the policy analysis process. The policy analyst should also at least be able to identify and develop a policy alternative that is adequate in attaining the relevant objective. It is advisable that the policy analyst's recommendation, if accepted, should be integrated into public policy and implemented devoid of radical amendments, as this could affect the achievement of the formulated policy objectives (Quade, 1989: 44).

Walker, (1994: 2) is of the opinion that the policy analysis process comprises eight procedures, which are not always utilised in a specific sequence. Walker, (1994: 2) writes that the policy analysis process procedures could include the following:

- (a) *Identify the problem*: This procedure implies identifying the issues involved, establishing the context within which these policy matters are to be analysed and the policy alternative will have to operate. This procedure also involves identifying and describing

the possible constraints on policy alternatives and identifying the public or community who may be affected by the policy alternative.

- (b) *Identify the objectives of the new policy alternative:* Public policy could be described as being a purposive action developed and implemented to solve a public problem. The decision-maker has particular objectives that, if attained, could address the policy problem or concern. In this procedure the public policy objectives are identified and specified. A public policy problem could relate to multiple objectives.
- (c) *Decide on the criteria (measures of benefits and costs) with which to analyse possible policy alternatives and establish the effectiveness and efficiency with which a policy alternative attains the identified objectives.* This procedure indicates identifying the benefits of a public policy that can be measured and are related to the objective. This procedure also implies the identification of the costs that could be created by a public policy and the relevant measurements.
- (d) *Identify and select the policy alternatives to be analysed and evaluated:* With this procedure the policy analyst identifies and selects the possible policy alternatives, the benefits and costs of which are to be calculated. It is advisable that all the relevant policy alternatives be included. The existing public policy should preferably also be included as the benchmark in order to enable the policy analyst to calculate whether the policy alternatives are actually more effective and efficient in attaining the selected objectives.
- (e) *Analyse each policy alternative:* This procedure indicates that the policy analyst calculates the possible costs and benefits of each policy alternative, should it be implemented. The policy results or consequences are measured in terms of the criteria selected in procedure (c). The policy analyst may apply policy analysis models and techniques in analysing each policy alternative.
- (f) *Compare the policy alternatives:* The policy analyst compares the calculated costs and benefits of each policy alternative and this procedure implies the ranking of the policy alternatives in terms of desirability and selecting the preferred policy alternative. If the policy alternatives analysed are not adequate for implementation or further variables and issues relating to the policy problem have been identified, the policy analyst should preferably start again with procedure (d).
- (g) *Implement the selected policy alternative:* This procedure entails attaining acceptance of the new policy, inside government and externally. The affected employees should also be educated to apply the new policy programme. The relevant manager and the policy analyst should attend to any function to successfully execute the implementation of the new policy.
- (h) *Monitor and evaluate the results:* This procedure is required to ensure that the policy alternative is in reality achieving the selected policy objectives. If the policy is not

attaining the objectives selected, the policy analyst requires altering the policy or redoing the policy analysis process.

Quade, (1989: 35) refers to the procedures of the analysis process as the logical stages in the policy analysis process and identifies the following five procedures:

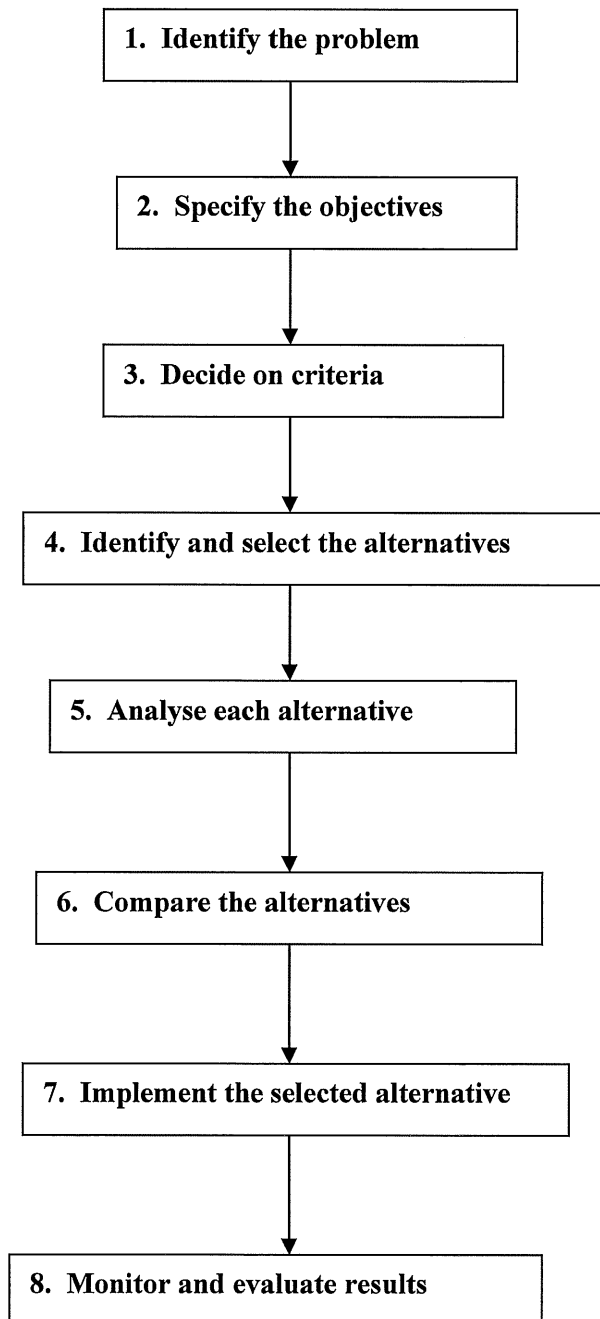
(a) *Formulation*: Clarifying and confining the policy problem and determining the objectives.

Formulation implies an endeavour to identify the relevant policy issues, to understand the background within which these issues are to be resolved, to clarify the objectives, to determine the important aspects that are functioning, and to understand the relationships between them. In the beginning these relations could be exceptionally hypothetical, as the available data are probably going to be limited. Arguably, formulation is the most essential procedure in the policy analysis process, for the endeavour spent formulating the policy problem in various manners, or redefining it, clarifies whether or not it is counterfeit or unimportant and directs towards an answer (Quade, 1989: 52).

The policy analyst should conduct a comprehensive analysis to identify and define the objectives of the decision-maker. To be correct, the policy analyst should seek extensive information regarding the relevant values and goals. To determine the effectiveness and efficiency of the different policy alternatives in attaining the objectives, the policy analyst should identify or determine techniques to measure its effectiveness and efficiency, which relates to values. To assist the decision-maker in selecting a policy alternative, a criterion for ranking the policy alternatives should be determined. The policy analyst should also realise that the decision-maker is ultimately responsible for selecting the objectives and criteria for public policy goals (Quade, 1989: 53).

The policy analyst should attempt to approach the policy problem in total and not analyse its components separately. The formulation process is vastly subjective. The policy analyst should also determine which policy alternatives are important to the decision-maker. The correct formulation of the problem and objectives is very important for the purpose of the analysis and the application of policy analysis techniques, such as an issue paper is recommendable. Once the problem has been identified and defined and the issues clarified, the policy analysis process may be viewed as being meaningful (Quade, 1989: 53).

Table 4/1: The procedures in the policy analysis process



Source: adapted from Walker, (1994: 3)

(b) *Search*: Identifying and developing the policy alternatives.

The search procedure involves the identification and developing of the policy alternatives and the information and relationships that form the foundation of the policy analysis. Generally it is more effective to search for additional policy alternatives than it is to identify exact alternatives for evaluation. If the policy analyst cannot identify or develop any policy alternative, there is nothing to analyse or to compare. If the policy analyst recommends a particular policy alternative, it must have been revealed in advance that such a policy alternative actually exists. It is essential that the policy analyst evaluate various possible policy alternatives. The decision-maker could be an effective source of information in this regard. The opinions and proposals of other stakeholders may be of value as well. If appropriate, the existing policy should be included in the analysis as a benchmark, to verify whether the policy alternatives are more effective and efficient and to calculate approximately how much improvement is probable (Quade, 1989: 54).

The importance of supporting studies (scientific, engineering, political, etc.) in the policy analysis process should be emphasised. In policy analysis an effective and relevant recommendation regarding a multifaceted policy problem may require various details, information and judgements concerning the policy problem. Supporting studies are generally able to provide the necessary information to the policy analyst. The policy analyst should have access to the relevant information in order to ensure that the information produced by the analysis is in agreement with the practical reality (Quade, 1989: 55).

(c) *Forecasting*: Forecasting the future environment or functioning context.

The benefits and costs that will occur from selecting and implementing a certain policy alternative also depend on the future state of affairs and functional context that exist for the duration of the time that the policy alternative is to be effective. If the relevant period for which the policy analyst predicts is rather far in the future, then the policy analyst may desire to formulate numerous different projections of the conditions in which the policy alternatives could function. The costs and benefits of the policy alternatives are then determined for every such projection. To forecast, the policy analyst could utilise various models. In policy analysis, forecasting based on unambiguous quantitative models is of restricted value. Forecasting transformations in social, political attitudes and in technology may best be applied by virtue of human knowledge and intuition (Quade, 1989: 55).

(d) *Modelling*: Developing and utilising models to determine the consequences.

To evaluate the costs and other consequences related with the diverse ways of functioning in a future system, it is required to calculate approximately the performance of the system in a variety of dissimilar conditions. To deal with this, the policy analyst creates a model of the system and its environment. For this purpose the policy analyst should favour a quantitative portrayal of the activities in the system, which may be utilised to predict its performance over the relevant series of functioning conditions. Perhaps this model can also be utilised to predict the results from a selected competing system. If not, the policy analyst requires the development of an additional model for this purpose. Models developed to determine the consequences could consist of a set of tables or graphs. More complicated models may be written in mathematical language and present algebraic or disparity equations, or can be developed as a computer programme (Quade, 1989: 56).

(e) *Synthesis*: Comparing and ranking the policy alternatives.

In this procedure, the policy analyst provides the decision-maker with a comparison of the policy alternatives and emphasises the important dissimilarities and similarities. The policy analyst also generally ranks the policy alternatives in terms of the predetermined criteria to assist the decision-maker in selecting a policy alternative (Quade, 1989: 58).

There could be two primary conceptual approaches that the policy analyst may utilise in ranking the policy alternatives. The first approach is to fix the level of effectiveness and then calculate which policy alternative is probably going to attain this level of effectiveness at the lowest possible cost. The second approach is where the policy analyst utilises a fixed budget. The policy analyst determines a particular cost level to be utilised in attaining the relevant objective. The policy analyst endeavours to determine which policy alternative will generate the highest effectiveness in relation to the predetermined cost. The fixed-budget approach may be of more value to the policy analyst and the decision-maker. The policy analyst then provides the decision-maker with a table indicating the results of the policy analysis process. By analysing this table and utilising practical experience, the decision-maker is empowered to select the most effective and efficient policy alternative in attaining the determined objectives (Quade, 1989: 58).

Various scientists are of the opinion that the policy analyst should not reveal the preferred policy alternative and be cautious in producing policy recommendations that are biased and relate to personal objectives and values. There could be scenarios where the analyst can

assist the decision-maker in selecting a policy alternative by indicating the preferred policy alternative (Quade, 1989: 60).

Policy analysis costs time and money and generally the analysis process ends prematurely without being completed, due to the limited availability of funds and time. Therefore, the policy analysis results are usually incomplete when it is presented to the decision-maker. Since policy analysts generally present the results of the analysis process before the study is actually completed, the results presented could be incorrect and of limited value (Quade, 1989: 62).

Hogwood & Gunn, (1984: 4) refer to the policy analysis procedures as the stages within the policy analysis process. Hogwood & Gunn, (1984: 4) write that it is advisable to analyse the policy issue in terms of various stages and are of the opinion that there are no definitive procedures in analysing public policy. The relevant procedures of the policy analysis process may include the following:

- (a) Deciding to decide (Policy issue search).
- (b) Deciding how to decide.
- (c) Policy issue definition (Defining the policy problem).
- (d) Forecasting.
- (e) Identifying and formulating the objectives.
- (f) Policy alternative identification and analysis.
- (g) Policy alternative adoption, monitoring and control.
- (h) Policy evaluation.
- (i) Policy continuation and termination.

Bresnick, (1982: 170) writes that policy analysis is generally an unambiguous rational procedure for identifying, developing and analysing public policy alternatives. The policy analysis process comprises procedures applied sequentially. Bresnick, (1982: 170) stipulates that the procedures of the policy analysis process may involve the following:

- (a) Identify and specify objectives.
- (b) Identify, develop and define policy alternatives.
- (c) Calculate consequences or impacts.
- (d) Evaluate each policy alternative.

Garson & Williams, (1982: 409) write that the public policy analysis process may include the following procedures:

- (a) Identify and define policy objectives.
- (b) Identify and specify the criteria for measurement.
- (c) Identify and develop policy alternatives for attaining the objectives.
- (d) Analyse each policy alternative's ability, in terms of the criteria, to obtain the objectives.
- (e) Determine the feasibility of each policy alternative (cost-benefit and cost-effectiveness analysis).
- (f) Policy recommendation.
- (g) Policy implementation.
- (h) Programme evaluation.

Dunn, (1994: 17) describes the procedures in the policy analysis process as follows:

- (a) *Problem structuring*: may provide the policy analyst with policy-related information regarding the postulations underlying the definition of the policy problem. It can also assist the policy analyst in determining the concealed policy issues, identifying possible policy problems, identifying and defining the policy objectives, identifying and determining incompatible considerations, and identifying and developing policy alternatives.
- (b) *Forecasting*: may provide the policy analyst with policy-related information regarding the possible future impact of implementing a policy alternative. The policy analyst may utilise forecasting to study potential future outcomes, determine the results of the current policy and formulated policy alternatives, identify the possible future limitations in attaining the policy objectives, and calculate approximately the political support of various policy alternatives.
- (c) *Policy recommendation*: may enable the policy analyst to produce policy-related data pertaining to the benefits and costs of policy alternatives, the future results of which have been calculated by virtue of forecasting. Policy recommendation could also assist the policy analyst in determining the levels of indecision regarding policy options, identifying public policy spillovers, identifying, developing and specifying criteria for attaining policy objectives, and allocating administrative liability for applying public policies.
- (d) *Policy monitoring*: could provide the policy analyst with policy-related data regarding the results and impact of public policies already implemented. Several institutions monitor the results and consequences of public policies by virtue of numerous public policy indicators in the sphere of health, education, housing, welfare, crime and technology. Policy monitoring may also assist the policy analyst in evaluating the extent of policy compliance, determining unintentional impact and results of public policies, identifying

policy implementation problems and constraints, and identifying the causes and liability for the non-implementation of public policies.

- (e) *Policy evaluation*: could assist the policy analyst in producing policy-related information regarding inconsistencies amongst predicted and actual public policy performance. Policy evaluation also results in conclusions regarding the effectiveness and efficiency in which a policy alternative has attained the policy objectives, and could further assist in explaining the values supporting a public policy. The policy analyst may utilise policy evaluation in the modification of policies, and to create a foundation for restructuring policy problems.

Anderson, (1997: 39 - 41) refers to the conceptual framework to direct the analysis of public policy. The conceptual framework is a chronological pattern of functions that may be notable analytically, even though they may be more complicated to separate empirically. Anderson, (1997: 39) also refers to the procedures in the policy analysis process as the stages within the analysis process and describes the stages as follows:

- (a) *Policy problem identification*: the purpose with this procedure is to establish how public policy problems are identified and defined. It is notable that some policy problems are analysed whilst other public problems are not considered. This procedure implies the identification of the public policy problem and to ascertain how a public policy problem gets included on a governmental agenda.
- (b) *Policy formulation*: entails the identifying and developing of public policy alternatives, which may address the identified public policy problem. In this procedure the analyst could also identify the stakeholders participating in the development of the policy options. The policy analyst should be able to identify any biases and personal objectives of the stakeholders, in developing the policy alternatives.
- (c) *Policy alternative adoption*: this procedure implies the actual selection of the policy alternative, identified or developed, to address a particular policy problem.
- (d) *Policy alternative implementation*: is in reality, policy administration. It emphasises what is being done to ensure the effective and efficient implementation of the adopted policy alternative. The policy analyst should identify any modifications or elaborations to the policy in the implementation thereof. If such modifications occur, the policy analyst should attempt to explain and evaluate the possible impact. The policy analyst and the decision-maker should also ensure that the officials responsible for implementing the policy have the necessary knowledge and education.
- (e) *Policy evaluation*: implies the actions conducted to evaluate whether a public policy is attaining the objectives it was developed for. The policy analyst and the decision-maker should establish whether the implemented policy requires any modification. Evaluation

could be described as the analysis of the policy results to ensure that the implemented policy is in practice attaining the desired objective effectively and efficiently. If not, the process of policy analysis is to continue.

In this chapter it is indicated that scientists do not always agree regarding the procedures or stages in the public policy analysis process. The study of the available literature indicates that Dunn, Hogwood & Gunn and Anderson's emphasis is on the analysis of the process of public policy-making. On the other hand, Quade, Bresnick, Walker, and Garson & Williams are emphasising the analysis of the outputs and results of public policies. Once all the available literature was identified and evaluated, and after various discussions with some of the relevant stakeholders, it was decided that the policy analysis process as described by Walker, (1994: 3), with certain amendments, is most appropriate for analysing the toll road policies of the South African National Roads Agency Limited (SANRAL), due to the nature of SANRAL's operations. The purpose in applying the policy analysis process and the relevant procedures is to promote rationality in the public policy-making process.

The elements of the public policy analysis process are described in the following section of the dissertation.

4.7 The elements of the public policy analysis process

This section of the chapter is utilised to define and describe the possible elements of the policy analysis process. These elements may include the following: policy objectives, policy alternatives, policy consequences, the criteria, policy analysis models, forecasting and policy analysis techniques. This chapter is also dedicated to the role of goals and objectives in policy analysis.

The public sector is first and foremost concerned with serving the public. Serving the public may be viewed as the principal objective of the Government. This is in agreement with the philosophic perception of a welfare state. This perception means that the Government has the responsibility to warrant a minimum right of life for the general public, predominantly the underprivileged section of society. The Government does not just exist to make life probable, but also to ensure a high quality life (Roux, 2000: 114).

Roux, (2000: 115) is further of the opinion that the Government cannot execute its duties if sufficient funds are not provided by virtue of an approved budget. Government-operative programmes cost billions annually and generally these funds are derived from taxes.

Taxpayers consequently expect government institutions to deal effectively and efficiently when innovative policy programmes are initiated or current policy programmes are modified.

In policy-making, prior to the implementation of new policy programmes, the Government should determine the cost-efficiency or cost-benefit of such public policies. This indicates that the policy analyst should utilise analytic techniques to make sure that the limited available funds are utilised effectively and efficiently. The policy analyst should constantly analyse current and innovative policy development to ensure that the best policy alternative is selected and implemented by the decision-maker. Public policy development and selection could be the most vital procedures in the policy analysis process (Roux, 2000: 115).

Roux, (2000: 141) further writes that the purpose of policy analysis is the determination of policy alternatives by virtue of available data. Forecasting is an essential element of this process, because it makes it possible to calculate the possible effects of a proposed policy alternative on society. Even though no process of forecasting can always be faultless, policy analysts and decision-makers cannot risk selecting and implementing policy alternatives without forecasting the consequences of each policy alternative over a particular period of time. After the most appropriate policy alternatives have been identified or developed, it should be compared and evaluated in terms of the criteria related to the policy objectives being pursued. These criteria generally comprise the political, economic, financial, social, environmental and technological costs, benefits and risks relating to each policy alternative over different periods of time. Subsequent to the conclusion of such an analysis, the most effective and efficient policy alternative may be identified. This is what is referred to as feasibility study.

Roux, (2000: 115) is of the opinion that, in practice, the elements of policy analysis are an entangled and unified set of activities.

Quade, (1989: 46) writes that the policy analyst should take cognisance of the elements in the policy analysis process when selecting or recommending a policy alternative. The policy analyst and the decision-maker should be able to select the best policy alternative or at least select and implement a good policy alternative.

The possible elements of the policy analysis process are described in the following section.

4.7.1 The policy objectives

The policy objective as an element of the policy analysis process could be described and defined as the following:

The policy objective is what a decision-maker seeks out to achieve by virtue of the policy alternative. Frequently, it is a problematic undertaking for the policy analyst to determine whether the policy objective identified and stated by the decision-maker, is in reality the objective required. The policy analyst should examine and determine what the correct policy objective should be. Consequently, the policy analyst should seek to obtain the decision-maker's consensus regarding the required objective. The determination of the required policy objective is an essential procedure within the policy analysis process. It is not always possible to identify and define the required policy objective, due to the limited availability of relevant information (Quade, 1989: 46).

The purpose of public policy is to solve a public problem. The decision-maker has particular policy objectives, and the attainment of these objectives should resolve the problem situation (Walker, 1994: 2).

The Public Administration Dictionary, (1995: 88) defines a policy objective as follows: "a short-term goal that can be deduced from an organisation's mission and that could be stated by means of a process of negotiation. This forms the basis of performance appraisal".

From the above information it could be deduced that the policy analyst should attempt to identify the required policy objectives of the decision-maker, as it could be an important element in determining the effectiveness and efficiency of the policy alternatives.

The policy alternatives may be another important element in the process of public policy analysis.

4.7.2 The policy alternatives

Policy alternatives as an element of the policy analysis process is described as follows:

The policy alternatives are the alternatives available to the decision-maker by virtue of which the policy objectives may be attained effectively and efficiently. Depending on the particular policy problem, policy alternatives may vary dramatically as strategies in attaining the policy objectives. Policy alternatives are not limited to the options known at the start of the analysis,

as the policy analyst may identify and develop various further options for consideration by the decision-maker (Quade, 1989: 46, 47).

The Public Administration Dictionary, (1995: 97) defines a policy alternative as the following: "A potentially available course of action that may contribute to the attainment of values and the resolution of a policy problem".

Walker, (1994: 2) writes that the policy alternatives are different policy options (courses of action) by which the desired policy objectives could be attained. Preferable, the current policy should also be included in the policy analysis process to serve as a performance benchmark for evaluating the costs and benefits of the possible policy alternatives.

After the policy objectives have been identified, stated and prioritised, the subsequent procedure in the policy analysis process is to identify and develop policy alternatives that may attain the policy objectives. This procedure in the policy analysis process is normally described as the "option generation and comparison" procedure. Policy option generation leads to the ranking of policy alternatives that conclude in particular policy selections. Policy alternative generation may be assisted by the utilisation of one or more policy analysis models, for example the instinctive, the garbage can, the incremental or the rational model. Generally, it is effective to utilise the rational model collectively with the incremental model where necessary (Roux, 2000: 129).

Weimer & Vining, (1999: 278) write that there is a diversity of sources for identifying and developing policy alternatives, for example current policies, policies implemented by other public institutions and generic policy solutions. The policy analyst should also evaluate the existing policy, not because it is inevitably the most effective and efficient policy alternative, but rather because other analysts may have found them to be adequate in dealing with a particular policy problem. Existing policy therefore could be the result of a previous analysis.

The literature survey indicates that the policy alternatives could be described as courses of action or policy options that may assist the decision-maker to attain the policy objectives. The policy analyst should attempt to identify and generate policy alternatives that could attain the required policy objectives.

Policy consequences or outcomes could also be a relevant element within the policy analysis process.

4.7.3 Policy consequences or outcomes

Policy consequences, results or outcomes could be described and defined as the following:

The selection of a certain policy alternative in an attempt to attain the objectives indicates a particular set of consequences. These consequences are referred to as the outcomes linked with the policy alternative. Consequences that are contributing towards the attainment of the objective are referred to as benefits. The negative consequences of a policy alternative are referred to as costs, which the policy analyst and the decision-maker attempt to minimise (Quade, 1989: 47).

Quade, (1989: 47) further writes that the policy analyst should realise that policy stakeholders may disagree regarding which consequences of an alternative are actually costs or benefits. The policy analyst should also identify the externalities, the factors or impact related to a policy alternative that are of primary concern to one or a few stakeholders. Although externalities may have a limited effect in attaining the objective, the policy analyst should nevertheless include it in the analysis process. The policy analyst may include the externalities by altering the policy objective. Costs may also be described as the resources required to implement a policy alternative. The policy analyst should further realise that it is not possible to express all costs effectively in Rand or in other quantitative terms.

The Public Administration Dictionary, (1995: 97) defines policy outcomes as “the consequences (both negative and positive), which a policy has for society. This includes both intended or unintended consequences, which may flow from the action or inaction of a public institution”.

Garson & Williams, (1982: 405) define policy outcomes as “the consequences, intended and unintended, that flow from the actions and inaction of government”.

The literature survey indicates that the consequences of a policy alternative refer to the outcomes, both negative and positive, that the selection and implementation of a policy alternative could have on society. The policy analyst needs to analyse the possible policy alternatives to ensure that an effective and efficient policy alternative is selected, recommended and implemented.

The criteria for analysing possible policy alternatives may also be a relevant element in the policy analysis process.

4.7.4 The Criteria

The criteria as an element in the policy analysis process can be described as the following:

The criteria are the standard in terms of which the alternatives are ranked in accordance with its capacity to attain the objectives. The criteria thus supply the means to communicate objectives, alternatives and consequences. The criteria are a numerical calculation of the extent to which the objective is attained. Generally the alternatives are ranked in terms of particular tasks. The alternative that may attain the task at the least cost is ranked first. If all the consequences could be determined in a single unit, for example in Rand, then one particular criterion may be utilised to rank the policy alternatives. If the objectives are aligned there is generally a single criterion for each objective. If the attainment of an objective is complicated to calculate accurately, the policy analyst may utilise numerous criteria relating to one objective (Quade, 1989: 47).

Walker, (1994: 2) writes that the criteria refer to the measures of performance, costs and benefits, with which to analyse possible policy alternatives. The possible policy alternatives are measured in terms of the criteria to establish the cost and benefits with which it achieves the specified objectives.

When calculating the effectiveness and efficiency of two or more policy alternatives, the policy analyst should make sure that the objectives and alternatives relate. The policy analyst should also identify and develop evaluation criteria, which agree with the needs of a particular policy problem, and will consolidate the objectives and policy alternatives in such a manner that policy alternative selection is possible. When selecting evaluation criteria, the policy analyst should realise that the prioritisation and the selecting of the criteria also pertain to the analysing of the policy alternatives (Roux, 2000: 134).

The literature survey generally indicates that criteria are identified, developed and utilised to measure the effectiveness and efficiency with which a particular policy alternative may attain the stated objective. The policy alternatives are analysed, compared and eventually ranked in terms of its ability to attain the objective in relation to the criteria selected or developed.

The policy analysis models may be a further important element of the policy analysis process.

4.7.5 The policy analysis model

The policy analysis model as an element of the policy analysis process is defined and described in this section of the chapter.

An important element of policy analysis is the formulation of a process that may indicate the possible consequences subsequent to the selection and implementation of a policy alternative. The model is a process required to indicate or predict what consequences may be produced, and to what extent the policy objective could be achieved. In the abstract, a model is a set of assumptions regarding a problem situation, a simplified image of reality that could be utilised to analyse the result of an action, without the action being undertaken. A model therefore, is a simplification of the real world consisting of the variables relevant to a problem situation and the important relationships amongst the variables. A model could be an organisational chart, mathematical equations, a computer programme or a physical structure (Quade, 1989: 48).

Quade, (1989: 48) is further of the opinion that policy analysis models are generally complicated mathematical formations programmed for a computer. Some policy models are uncomplicated and utilised by the analyst throughout the whole analytic process: to identify and define the extent of the problem situation, to calculate the possible attainment of the objectives, to limit the number of policy alternatives and to present the results. This, in practical terms, implies that the policy analyst utilises a model whenever a decision needs to be made. In the process of model building, the policy analyst evaluates the assumptions and variables regarding a particular problem, and utilises available information to determine the hypothesised relations. The policy model may enhance the policy analyst's knowledge of the problem situation and empower the analyst to predict the possible consequences of policy alternatives.

Policy analysis models may be useful in the understanding of policy-related issues and are merely instruments for the policy analyst, who studies the environmental phenomena and compares the relationships between different set of variables according to a specific method. The choice of a specific model is the decision of the policy analyst and is a reflection of the subjectivity present in scientific research (Roux, 2000: 139).

Roux, (2000: 140) describes a model as "a symbolic representation (example or image) of a particular phenomenon" and further states that in the social science a model is a more abstract presentation of a given situation or event. Roux, (2000:140) refers to models of policy formulation and policy alternatives as examples thereof and is further of the opinion

that models are sometimes regarded to be synonymous with theories. Policy analysis models could be compared to the models utilised in policy formulation and decision-making.

A model could be described as “a representation of a more complex reality that has been oversimplified in order to describe and explain the relationships among variables, and even sometimes to prescribe how something should happen”. Policy analysis models could explain various aspects of the public policy process (De Coning, 2000: 24).

Hogwood & Gunn, (1984: 42) write that a policy analysis model could be defined as a “representation of something else, designed for a specific purpose”. Hogwood & Gunn, (1984: 42) further state that the purpose of abstract model building remains those of representation, simulation, explanation, prediction, experimentation and hypothesis, and emphasise the fact that models don’t need to be physical.

Dye, (1995: 18) as well as Roux, De Coning and Quade write that a model is a simplified representation of some aspect of the real world. Dye, (1995: 18) further writes that a model might be an actual physical representation, and that a model could be a diagram. Policy analysis models may also be presented as a flow chart that political scientists use to illustrate how a bill becomes a law.

Models are applied in public policy analysis for the following reasons: (a) To simplify and clarify the thinking of the policy analyst regarding public policy; (b) to assist the policy analyst with the identification of the important aspects of policy problems; (c) to assist the policy analyst to communicate with the relevant role players, by focusing on the important dimensions of the political system; (d) to direct the efforts of the policy analyst towards understanding public policy better, by indicating what is important and what is unimportant; and (e) to give explanations regarding public policy and predict the possible consequences of policy alternatives (Dye, 1995: 18).

Dye, (1995: 18) further writes that the primary purpose of a policy analysis model is to assist the policy analyst in understanding the political system better.

Roux, (2000: 140) writes that policy analysis models might in some instances be regarded as synonymous with theories. De Coning, (2000: 24) differentiates between policy analysis models and theories.

A theory could be a comprehensive, systematic, consistent and reliable explanation and prediction of relationships among specific variables. Theory is based on a combination of

different concepts and models. Theory attempts to provide complete explanations and predictions of possible future circumstances and events. Theory is normally assessed in accordance with its predictive validity and policy analysis models are usually measured in accordance with its utility in accurately describing and presenting reality (De Coning, 2000: 24).

Quade, (1989: 139) writes that a policy analysis model may be “an idealisation, an abstraction of some part of the “real world”, an incomplete representation of the real thing – an imitation of reality”. Policy analysts utilise models when a problem situation is too complex, too dangerous or too expensive to study directly. A model represents the problem situation with its important features, but it is manageable and easier to study. The analyst attempts to produce more information regarding a problem situation by applying one or more models.

Quade, (1989: 140) further defines a model as a “substitute for reality, a representation of reality that is hopefully adequate in relation to the practical problem situation”. It is made up of factors relevant to a particular situation and to the relations amongst them. Quade, (1989: 140) confirms that policy analysis models are utilised for the producing of information regarding the possible consequences (costs and benefits) of adopting a specific alternative.

Policy analysis models could be defined as “simplified representations of selected aspects of a problem situation, constructed for particular purposes”. Policy analysis models may further be described as artificial reconstructions of reality in areas that might range from energy and the environment to poverty, welfare and crime (Dunn, 2004: 86).

Dunn, (2004: 86) is of the opinion that policy analysis models may be presented as concepts, diagrams, graphs and mathematical equations. The models may be utilised to describe, explain and predict the variables of a problem situation, but may also be used to improve a problem situation by recommending possible courses of action to resolve a particular problem. Policy analysis models are not literal descriptions of a problem situation. Models are artificial instruments for imaginatively ordering, interpreting and understanding a problem situation. The models are not only useful, but are necessary instruments for the policy analyst. Models simplify a problem situation by decreasing the complexities that may be found by the policy analyst and making them more manageable. Policy analysis models could assist the policy analyst to distinguish between the important and insignificant elements of a problem situation. Policy analysis models emphasise the relationships between the important variables of a problem situation and could assist in describing, explaining and predicting the possible consequences of policy alternatives. Policy analysis

models contribute to the clarifying and simplification of a problem situation and enhance the selective distortion of reality. It is important to note that a model in itself cannot inform the policy analyst on how to distinguish between important and nonessential elements and variables and it could be difficult to communicate the elements and results of a model to policy-makers.

In policy analysis there are concepts that could confuse the policy analyst. The most confusing concept within policy analysis could possibly be the term “model”. The concept policy analysis model sometimes has different meanings to different policy analysts (Stokey & Zeckhauser, 1978: 8).

Stokey & Zeckhauser, (1978: 8) define a model as a “simplified representation of some aspect of the real world, sometimes of an object, sometimes of a situation or a process. It may be an actual physical representation”.

The literature survey indicates that Roux, (2000: 140), De Coning, (2000: 24), Dye, (1995: 18), Quade, (1989: 139), Dunn, (2004: 86) and Stokey & Zeckhauser, (1978: 8) all define a policy analysis model as a symbolic representation of a certain aspect of the real world or of a particular phenomenon. Policy analysis models could be abstract or physical representations of a problem situation. It is worthwhile to note that Quade, (1989: 140) and Dunn, (2004: 86) also write that policy analysis models are utilised to produce information regarding the possible policy alternatives to address a problem situation. Policy analysis models are also utilised to simplify and clarify a complicated policy problem situation. The purpose with policy models is to provide the policy analyst with a better understanding and relevant information regarding a practical problem situation.

Forecasting is also an element of the policy analysis process that requires be describing and defining.

4.7.6 Forecasting

The following descriptions indicate the different dimensions of the concept of forecasting. In the following section some authors comments on forecasting are presented.

Quade, (1989: 152) writes that to forecast is to predict some future state, generally as the result of analysis. Policy analysts who do not undertake forecasts suppose the environment may not alter to a great extent, or that the situation is so unsure that nothing can be done to predict future events or scenarios. If the policy analyst has identified and formulated various

policy alternatives, it should be attempted to select the policy alternative, which may be the most efficient and effective in attaining the stated objective. To select the policy alternative rationally, the policy analyst is required to calculate what the policy impact may be. To calculate the impact of a policy alternative, the analyst requires a description of the environment in which the policy alternative will be utilised. Therefore all policy decisions involve forecasting.

Forecasting comprises the means by which the policy analyst seeks to be acquainted with the future as a guide to policy decisions (Parsons, 1995: 403).

The policy analysis approach to forecasting indicates information regarding the techniques that are available and the restrictions thereof (Hogwood & Gunn, 1984: 128).

Hogwood & Gunn, (1984: 128) further write that forecasts cannot predict the future, but it may help the policy analyst to deal with alteration and to investigate the implications of policy alternatives. Forecasting may be an expensive process; therefore the policy analyst should determine the probable benefits from forecasting and the costs of executing it and find an acceptable balance. Forecasting in policy analysis is consequently not directed at predicting the future, as in practical terms this is not possible, but the policy analyst may attempt to analyse the implications of different postulations.

The capability to forecast expected policy alternative impact is important to the effectiveness of policy analysis and the enhancement of policy alternative selection. By virtue of forecasting, the policy analyst may acquire a prospective vision and subsequently improve the capability for understanding the future environment within which a policy alternative will be implemented (Dunn, 2004: 129).

Dunn, (2004: 130) is further of the opinion that forecasting is a procedure for generating realistic information regarding the future state of humanity on the foundation of prior information with regard to policy problems.

Forecasting is the product of scientific and rational study for the intention of policy analysis. Policy analysis, particularly where the possible impact of a policy alternative has to be determined, is focussed on the future and forecasting may constantly be an important factor. Decisions regarding policy alternatives may not be taken without a determined effort to predict the probable impacts of such policy alternatives. The policy analyst should utilise every possible scientific technique in order to determine the possible impact of policy alternative selection and implementation (Roux, 2000: 136).

For the purpose of this study, forecasting means the prediction of future developments or scenarios frequently based on the extrapolation of past and current trends. The literature survey indicates that the purpose of forecasting is to predict the probable future environment within which possible policy alternatives could be implemented. Forecasting therefore, may assist the policy analyst in selecting and recommending a more appropriate policy alternative.

Public policy analysis techniques may be a further important element in selecting the most effective and efficient policy alternative.

4.7.7 Public policy analysis techniques

Public policy analysis techniques are described in this section of the chapter.

According to Nagel, (1991: 1) policy analysis techniques are “the procedures for either (a) determining the relation between policies and objectives or (b) drawing conclusions from objectives, alternative policies and relations, in regard to which policy or combination of policies is best under given constraints and conditions. It also refers to procedures for clarifying and measuring objectives and policies.”

Brynard, (2000: 154) writes that a technique “is one step of a procedure. Complex tasks can be subdivided into particular procedures, which can in turn be subdivided into particular methods for each step of the procedure.”

Policy analysis techniques “involve judgements of different kinds; judgements to accept or reject an explanation, to affirm or dispute the rightness of an action, to select or not select a policy, to accept or reject a prediction, to define a problem in one way rather than another” (Dunn, 2004: 6).

Analysis techniques are aimed at “defining alternative responses and assessing the possible costs and benefits associated with each alternative, in order to make a rational policy decision”. Policy analysis techniques “focus on the effects that public policies have actually, or what differences policies have made in specific societal conditions” (Wissink, 2000: 69).

Public officials utilise policy analysis techniques analytically to warrant that “limited resources are not wasted”. Policy analysis techniques should be utilised to analyse “existing and new policy trends to ensure that the best policy options are implemented” (Roux, 2000: 115).

Roux, (2000: 121) also writes that the application of policy analysis techniques implies “the search for alternatives, and consequently goals and objectives”.

Policy analysis techniques are being used to learn about the consequences of public policy, (which includes all the policy effects “on real world conditions” (Cloete, 2000: 211).

Cloete, (2000: 211) further writes that policy analysis techniques are used “to measure performance programmes so that the continuous change in activities can be determined with a view to improve effectivity”.

The Concise Oxford Dictionary, (1995: 1430) defines a technique as “a means or method of achieving one’s purpose, skilfully; a manner of performance”.

Cassell’s English Dictionary, (1979: 1157) defines technique as “a mode of artistic performance or execution; mechanical skill in art and craft”.

The policy analyst should identify and define the policy objectives before considering which techniques are appropriate for the analysis. The content and complexity of the policy problem will determine the selection of the appropriate techniques. The policy analyst could choose between a variety of policy analysis techniques. Policy analysis implies the analysing of policy alternatives in terms of a selected criterion in reaching the defined objectives. Policy analysis could produce valuable information for the decision-maker concerned. The purpose in using analysis techniques is to predict the consequences (costs and benefits) as well as the value impacts of policy alternatives. The primary analysis techniques in policy analysis could be cost-benefit analysis, cost-effectiveness analysis and multi-goal policy analysis (Weimer & Vining, 2005: 338).

A policy analyst will apply policy analysis techniques before selecting or recommending a policy alternative to the decision-maker. Policy analysis techniques are utilised to determine the possible costs and effectiveness of policy options. To enable policy analysts to obtain and generate information with regard to the policy alternatives, policy analysis techniques are utilised. Policy analysis techniques could enable the policy analyst to find and create rational solutions to public policy problems (Roux, 2000: 145).

Cloete, (2000: 218) writes that the policy analyst should apply a combination of quantitative and qualitative techniques in measuring the effectiveness and efficiency of the policy alternatives.

The survey of the literature indicates that many policy analysis techniques are available to the policy analyst to assist in identifying, analysing, developing, selecting and recommending the best possible policy alternative. The policy analyst could utilise policy analysis techniques to calculate the possible benefits and costs of competing policy alternatives. The study indicates that it is possible to differentiate between quantitative and qualitative policy analysis techniques. Different policies and conditions may affect the analyst's selection of the applicable analysis technique, in some circumstances one technique could be more appropriate to apply in comparison with some of the other techniques.

In this section it is also indicated that the purpose in applying policy analysis techniques is not only to select the best policy alternative but also to promote rationality in public policy decision-making. The policy analyst could apply a combination of policy analysis techniques to ensure the policy selected or recommended may achieve the specified objectives of the decision-maker effectively and efficiently.

In understanding the process of policy analysis it is also necessary to describe and explain the role of policy goals and objectives.

4.8 The role of goals and objectives in policy analysis

Goals and objectives are regularly set in order to aid the policy analysis process. In this section different authors views are presented.

Policy scientists have formulated diverse models of the process of policy analysis. Notwithstanding some dissimilarity in conceptualising the policy process, it is apparent that the policy analysis process will constantly commence with the identification and definition of a certain policy problem. A problem can be described as a major and unnecessary discrepancy since policy analysis as a science is motivated by the presence of a problem, and a declaration of the problem precedes all scientific research programs. It should be noted that a researchable problem should exist, which, subsequent to the identification and definition of the problem, and the gathering and analysing of information, may lead to the identification of policy alternatives and recommendations. The policy analysis process utilises the same procedures as applied in other scientific research. However, problem identification may be meaningless if apparent goals and objectives are not identified and defined. Identifying, developing and defining goals and objectives indicate the utilisation of judgement and the capability to predict future scenarios, by means of mathematical models (Roux, 2000: 115).

Roux, (2000: 117) is also of the opinion that the ability to make forecasts enables the policy analyst to identify and develop apparent goals and related objectives, and to identify and develop policy alternatives. The policy analyst may utilise policy analysis techniques such as cost-benefit and cost-effectiveness analysis, to identify or develop the most effective and efficient policy alternative. Policy analysis is not achievable if the problem is not defined and the goal and objectives of the analysis are not identified.

It is not unusual for policy scientists to disagree regarding the definition and interpretation of concepts such as goals and objectives, and activities and tasks as sub-elements of objectives. It is important that the policy analyst has an unambiguous understanding of the meaning of these concepts. The policy analyst should especially know the meaning of the terms goals and objectives, how they are different and how to identify them for the purpose of analysing public policy (Roux, 2000: 117).

The following three definitions of goals are presented to clarify the meaning of the concept.

The Concise Oxford Dictionary, (1982: 424) defines a goal as “a point marking the end of a race, destination and the object of effort or ambition”. The Concise Oxford Dictionary, (1982: 699) defines objective as “a point or thing aimed at”.

The Public Administration Dictionary, (1995: 84) defines a goal as (a) “an unrealised state not yet achieved by the members of an organisation but which they regard as desirable” and (b) “an unrealised state or condition that the members of an organisation do not possess, but which they deem desirable”.

The Public Administration Dictionary, (1995: 88) defines a policy objective as follows: “a short-term goal that can be deduced from an organisation’s mission and that could be stated by means of a process of negotiation. This forms the basis of performance appraisal”.

An important procedure in the policy analysis process is the requirement of goals and objectives. Even though goals and objectives are equally directed towards the future, goals state broad intentions, whilst objectives indicate specific aims. Goals are rarely stated in the form of a functioning description, a description that stipulates the procedure required for measurement, whilst objectives are. Generally, goals are not quantifiable, whilst objectives frequently are. Statements of goals as a rule do not indicate the time period in which policies are required to attain the required results, whereas statements of objectives do. Ultimately, goals identify target groups in broad terms, whilst objectives describe target groups explicitly. The policy analysis process requires the policy analyst to elucidate goals and objectives and

further requires the policy analyst to identify and develop various policy alternatives effective and efficient for the attainment of aims (Dunn, 1994: 195).

Public policy analysis is generally never absolute in terms of its results or effect on society. This is primarily due to the frequent altering in the needs and demands of the public. The setting, within which the Government operates, is also constantly subjective to socio-economic, technological and political value transformations, which require of the policy analyst to redevelop and modify current policies. This may require the policy analyst to perform a retrospective policy analysis. This implies that current public policies and its limitations, as identified by the decision-maker or the policy analyst, should be analysed effectively and efficiently (Roux, 2000: 118,119).

After a policy problem has been identified and defined, the next procedure in the policy analysis process is to formulate the goals and objectives necessary to deal with the policy problem. Goals and objectives may be viewed as the purposes of a government programme. A goal may be the sought-after result that could limit the effect of an undesirable effect. Objectives may be described as more specific statements of goals. Since the policy analyst seldom finds the programme goals efficiently stated, the analyst generally utilises various sources to determine what a programme is intended to achieve. Legislative statements, such as ordinances, laws, and resolutions, could provide some indication of a policy's purpose (Garson & Williams, 1982: 408, 409).

The literature survey indicates that after the policy analyst has defined and clarified the policy problem, it is necessary to identify and define the policy goals and objectives. Goals rarely state the functions or actions necessary to address a problem situation. Objectives provide measurable procedures in addressing the policy problem. Generally, goals are not quantifiable, whilst objectives tend to be quantifiable. The statement of goals generally does not include a time framework for generating solutions to a problem situation. Policy objectives may include a stipulated period of time within which the desired results should be achieved. Policy goal and objective determination generally is the procedure following the identifying and definition of the policy problem.

4.9 Conclusion

This chapter is utilised to identify and describe the appropriate definitions of public policy and public policy analysis. The survey of the literature confirms that various policy scientists approach the definition of these concepts differently or otherwise emphasise different elements of these concepts.

This chapter also provides information regarding the advantages and limitations of public policy analysis. Public policy analysis may promote the effectiveness and efficiency of public policy, but the policy analyst should be aware of the limitations of policy analysis to ensure that the necessary steps can be undertaken to optimise the value of the policy analysis process.

This chapter of the dissertation is also utilised to identify and describe the procedures of the policy analysis process. The survey of the literature indicates that policy scientists do not agree regarding the procedures that should be utilised in the policy analysis process. Some of the policy scientists also utilise different concepts when referring to the procedures of the policy analysis process. Generally the following four procedures were applied by the majority of the policy scientists: identify the policy problem, specify the objectives, decide on the criteria, and identify, select and analyse the possible policy alternatives.

This chapter is further devoted to determine the possible elements of the policy analysis process. The following elements within the policy analysis process were defined and described: the policy objectives, the policy alternatives, policy consequences, the criteria for evaluating policy alternatives in attaining the policy objectives, policy analysis models, forecasting in policy analysis, and the policy analysis techniques. This chapter also describes the role of goals and objectives in the policy analysis process. These elements of the policy analysis process could be relevant to the practical analysis of the South African National Roads Agency Limited's (SANRAL) toll road policy.

After policy and policy analysis has been described it is possible to attend to the practical policy analysis of SANRAL's toll road policy. Chapter 5 is dedicated to the analysis of the toll road policy of SANRAL. The purpose of this dissertation is to indicate that the SANRAL Toll Road policy alternative could be effective and efficient in assisting SANRAL in providing and developing the necessary primary road network in South Africa.

CHAPTER 5

AN ANALYSIS OF THE SANRAL TOLL ROAD POLICIES

5.1 Introduction

The task entrusted to the South African National Roads Agency Limited (SANRAL) was to provide and control a world class, sustainable national road network as cost-efficiently as possible, in order to encourage economic growth and develop the quality of life of all South Africans. Underlying this task was the identification that transport plays a vital role in the economic and social progress of any country (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 6).

SANRAL's objective was developed against the background of a necessary national road network of some 20 000 km compared to the current 14 000 km, despite the budgetary restrictions enforced by the National Treasury, that is affected by demands for other priorities such as social reconstruction and equalisation programmes. The dilemma is aggravated by the fact that the existing road network is subject to increasing traffic volumes and weakening through extensive congestion (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 6).

SANRAL has proactively searched for policy alternatives to provide finance for road infrastructure and opportunities to reduce the reliance on tax-based revenues after recognising the extent of the various demands on the National Treasury and the benefit of creative commitment with the private sector. SANRAL has applied the user pay principle in developing both the SANRAL and Concession toll road policy alternatives (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 6).

The Concession toll road policy alternative presents an opportunity to partner with the private sector and SANRAL is now able to negotiate investments in the development and maintenance of the country's road infrastructure assets for periods beyond the Government's three-year expenditure planning. In reality there are no free roads because roads are either funded through general taxes or user fees (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 7).

An effective balance between the social and economic interests in roads provision is important for ensuring that the disparity between the disadvantaged and the economically

advantaged sectors of society is reduced. Roads authorities in the past have hastily differentiated between social and economic roads in an effort to motivate certain sources of funding and to assume responsibility for these roads. The results were inadequacies in the development of infrastructure, which affected both social and economic needs. Road development and planning also became compartmentalised, resulting in various organisations and departments with no dedicated institute responsible for a holistic, integrated and needs-responsive road network. It is desirable that road development, building and maintenance should be approached on a network basis, due to the secondary benefits that could be generated. The location of a road, or its current or envisaged future standard, should not be the prevailing criteria for planning, but its role in the greater social and economic context of the country should be the most important criterion (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 20).

SANRAL, being responsible for the national road network, should also take responsibility for providing the road infrastructure that links major economic and social spatial developments on a national scale. SANRAL promotes the concept that each and every roads authority should see its role in terms of needs that require fulfilment and not in terms of the class of roads that it should manage, thus strengthening the roads authorities position to lever in private sector involvement and to promote private sector participation in new road schemes. An important objective of a programme to develop and maintain a comprehensive road network, is to facilitate acceptance for the implementation of toll road policies for new road network expansion. Toll road policies could be necessary in order to limit the funding shortages between the demand and National Treasury allocations for the non-toll national road network, by illustrating:

- (a) The existing condition of the non-toll national road network and the funding demand.
- (b) Further deterioration of the non-toll national road network, should National Treasury funding levels remain at the existing level, and the consequent financial, economic and social implications.
- (c) The decline of the deficit by the planned toll road expansion.
- (d) Conservative toll road policy alternatives and phasing strategy that could reduce the financial risk for both SANRAL and the National Treasury.
- (e) Assistance in the developing of a primary road network, thus alleviating the pressure on the provincial governments (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 21).

The purpose of this chapter is to commence with the analysis of SANRAL's toll road policies. The purpose with the dissertation is to prove that the SANRAL toll road policy alternative may enhance the development and maintenance of the national road network in South Africa. The SANRAL toll road policy alternative may also be viewed as a funding mechanism in the development and maintenance of national roads. For the purpose of this study, the policy analysis process consists of the following procedures. Firstly, the problem is identified and clarified; secondly, the SANRAL objectives are identified; thirdly, the criteria for analysing the SANRAL toll road policies and the Non-toll road policy alternative are identified. The fourth procedure is to identify and select the alternative policies available to SANRAL management for the development and maintenance of the national road network. The fifth procedure entails the analysis and description of the policy alternatives. The sixth and last procedure within this policy analysis process is the conclusion and recommendation. This procedure is utilised to make the results of this policy analysis process known.

For practical purposes it has been decided to spread the analysis of the toll road policies and the Non-toll road policy alternative of SANRAL over four different chapters. Chapter 5 is dedicated to the following: identification and clarification of the problem, identification of the policy objectives, selecting of the evaluation criteria, identification and selection of the possible policy alternatives, and the analysis of the Non-toll national road policy alternative.

The following section of this chapter is utilised to identify and clarify the problem situation.

5.2 Identification and clarification of the problem

The literature survey indicates that the policy analysis process generally commences with the identification and clarification of the problem situation. SANRAL's problems and challenges in providing a primary national road network in South Africa is being described and explained in this section.

It is SANRAL's objective to develop and maintain an effective and efficient network of national roads to serve the citizens of South Africa. To develop such a network of national roads will require a substantial amount of funds. The problem or challenge for SANRAL is to provide and maintain a primary national road network with the limited amount of funds available. For various national roads, available funds are only adequate to attend to the necessary maintenance work to ensure the good quality of these roads (Van Niekerk, 2006: Interview).

Since 1988, no portion of the levy on fuel has been allocated to the National Road Fund, (now known as the SANRAL Portfolio Fund). In view of the decline in the allocation of funds for the development and maintenance of the primary road network, supplementary sources of funds, which will not impact upon the budget, will have to be established to evade the degeneration of the national road network and accommodate the needs for national roads to promote economic growth. Toll road policies, as a direct user-charge which motorists are willing to pay, are the policy alternatives upon which the future financing of the national road network in South Africa may have to depend on (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 12: 1).

The Department of Finance is endeavouring to minimise government-guaranteed debt. Based upon initial suggestions by the Department of Finance regarding a possible elevated level of SANRAL's government-guaranteed loans of R10 billion, SANRAL needs to procure supplementary funds in order not to exceed the R6 billion government-guarantee. Since the necessary funding for the implementation of new planned toll roads will be over and above the loans required for the current SANRAL projects, the government-guaranteed debt level of R6 billion will certainly be surpassed if the new toll roads are merely funded by procuring additional government-guaranteed capital and funding. It is therefore important for SANRAL to finance the needs above R6 billion from non-government-guaranteed funding (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 29).

The deliverables for non-toll roads are based on the proposed allocations from the National Treasury and any reduction or increase of the allocations will impact upon the envisaged road-development programme. The building of Non-toll roads are therefore dependent on the funds received from the National Treasury, which is influenced by circumstances relating to socio-economic factors (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 12).

The limited National Treasury allocations have been identified by SANRAL as a critical problem. Substantial investments and reinvestments are required to maintain the national road infrastructure in order for South Africa to have a world class national road network to promote global competitiveness. In South Africa more than fifty percent of the non-toll road network is older than its design life. Further development and maintenance of existing non-toll national roads remain a constant challenge due to the limited funds available (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 16).

The current national toll road network is estimated to require R20 billion for its development and maintenance. SANRAL has the support of government guarantees for the loans raised

from the capital and money markets, and this guarantee has been endorsed by the Ministers of Transport and Finance. The guarantee is limited to an amount of R6 billion and is insufficient for the development and maintenance of the national toll road portfolio (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 16).

SANRAL receives an annual budget provision from the National Treasury to fund the non-toll roads. The existing 14 000km of national roads within SANRAL's control comprises both toll and non-toll roads. Toll roads are financed by means of the user pay principle, whilst non-toll roads are financed through the National Treasury. The problem in this regard, specifically with reference to non-toll roads, is that while road use constantly increases, the road funding declines. The existing budget provision from the National Treasury has fallen to such a level that it is not possible to effectively finance the maintenance requirements of the existing non-toll national road network. The National Treasury provision is also not effective in providing the finance required for road development to meet the increasing traffic demands. In view of SANRAL's assumed funding level of R1,4 billion per year for the non-toll national road network and the non-realisation of the toll road programme, it is anticipated that the current national road network will quickly deteriorate over the next five years to a forecasted backlog of approximately R11,5 billion. SANRAL's problem is not only limited to the current funding backlog, the persistent deterioration of national road pavements is also part of the problem. In practice this indicates that SANRAL's supposed funding capacity is only sufficient to effectively maintain approximately 40% of the non-toll national road network (The South African National Roads Agency Limited: Annual Report, 2005: 35) and (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 8, 9).

SANRAL has accepted the fact that the funds exclusively received from the National Treasury are insufficient to meet the growing national road expenditure demand and consequently other policy alternatives have to be developed or utilised to minimise financial risks for both SANRAL and the National Treasury (The South African National Roads Agency Limited: Annual Report, 2005: 5).

National road performance depends on what, when and how maintenance is performed. Roads deteriorate over time due to traffic and environmental influences (weather, ultra-violet radiation and overloading). National roads have to be maintained during its design life to ensure that the envisaged performance is achieved. The financial costs of delayed maintenance actions are borne mainly by the road users. Once a national road is not maintained, and is allowed to decline from good to very poor state, each R1.00 not spent on national road maintenance (a false saving) increases operating costs by R2.00 to R3.00. Saving funds on road maintenance increases the cost to the economy as a whole.

Postponing road maintenance due to budget constraints results in a significant financial penalty. SANRAL has adopted an asset-preservation policy. This asset-preservation policy, also referred to as the “Prevention First”-policy, seeks first to maintain existing assets at life cycle costs with obtainable resources, before new assets are developed (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 37 -39).

The survey of the literature indicates that SANRAL requires approximately R30 billion to develop and maintain the proposed primary national road network of 20 000 kilometres. The Government currently provides a government-guarantee of R6 billion to enable SANRAL to negotiate loans from the capital markets to fund the development and maintenance of the national toll road network. This guarantee could be increased to approximately R10 billion in the near future, which may still be insufficient to develop and maintain the required national toll road network. With regard to non-toll national roads, SANRAL receives approximately R1,4 billion per annum to maintain and develop the non-toll national road network. This funding amount could be only sufficient to maintain approximately 40% of the non-toll national road network. The above-mentioned information and statistics imply that currently SANRAL may have insufficient funds available to develop and maintain the required primary national road network necessary to promote the economic and socio-economic status of the people of South Africa.

Van Niekerk, (2007: Interview) is also of the opinion that SANRAL’s problem is to obtain the R30 billion required to developed and maintain the proposed primary national road network and to reduce the dependency on government-guaranteed debt.

Public policy analysis also entails the identification of the policy objectives of the decision-maker. The next section of this chapter is devoted to identify and describe the policy objectives of SANRAL.

5.3 Identification of the objectives

This section identifies and describes the objectives of the policy analysis process. The objectives are to be attained by the possible policy alternatives.

It is SANRAL’s objective to develop and maintain a primary national road network of 20 000 kilometres of strategic and economic importance (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 19).

According to Van Niekerk, (2006) the following could be SANRAL's most important objectives that should be addressed by the policy alternatives:

- (a) SANRAL's main objective is to develop and maintain a primary national road network of approximately 20 000 kilometres that could cost R30 billion and which may stimulate and promote economical growth in South Africa.
- (b) To decrease the dependency on government-guaranteed debt, which is set at R6 billion, and to generate its own funds from the national and international money markets.
- (c) To better maintain the non-toll roads by including them in the primary national road network.
- (d) To provide a socio-economical service to all regions within South Africa by providing good national roads. Polokwane, Rustenburg and Nelspruit may have benefited from the development and building of national roads. National roads could enhance accessibility to regions and therefore promote business in the process. "To create wealth through infrastructure" is also the slogan of SANRAL.
- (e) To ensure that effective and efficient road carriage is possible.
- (f) To ensure and promote the safety of national roads through:
 - (i) Adequate road surfaces.
 - (ii) Applying geometrical standards, to ensure applicable road gradients and safe cornering on national roads.
 - (iii) Enhancing the vehicle capacity of national roads.
- (g) To enable the public to reach their daily destinations quickly and safely.
- (h) To enhance the effective and efficient daily commuting by the public.
- (i) To enhance the effectiveness and efficiency of the intermodal transport system.

For the purpose of this study, the objectives to be achieved are the following: to develop and maintain a primary national road network of approximately 20 000 kilometres that could cost R30 billion and which may stimulate and promote economical growth in South Africa, to decrease the dependency on government-guaranteed debt, which is set at R6 billion, and to generate its own funds from the national and international money markets and to better maintain the non-toll roads by including them in the primary national road network.

The policy analysis process also entails the identifying and selecting of the appropriate criteria for analysing the policy alternatives.

5.4 Selecting the criteria in evaluating the policy alternatives

This section of the chapter is utilised to identify and describe the criteria that should be used in evaluating the policy alternatives.

In accordance with the Department of Transport Report: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C, Pages 1 - 5) the following factors have to be taken into consideration in order to analyse, formulate and select a policy alternative for SANRAL:

5.4.1 The borrowing capacity of SANRAL

The borrowing capacity of SANRAL is one of the primary aspects to be taken into account in formulating, selecting and recommending a policy alternative. The capability of a borrower to acquire funds from an extensive range of investor categories is primarily dependent upon the following:

- (a) *Perception*: The perception formed of the borrower in the minds of the lenders is a significant consideration. A borrower, who is seen as being a low risk and efficiently managed, will be able to borrow funds at a lower rate.
- (b) *Nett asset value*: Lenders tend to evaluate the nett asset value as a method of security. A high nett asset value will enhance the risk profile of the borrower, because of the borrower's capability to refund capital through the disposal of assets. In the case of SANRAL, this would not be possible, no matter how high the nett asset value. South Africa's primary national road network cannot be sold to repay lenders.
- (c) *Cash flow*: Cash flow is an important factor as it indicates the ability of the borrower to repay both capital and interest. A sensible borrowing policy should be implemented in the early stages while confidence is being created. In reality, as long as there is the capability to service the loans, repayment of capital becomes a secondary consideration. In SANRAL's case, the assets will not deteriorate if effective pavement maintenance procedures are adhered to.
- (d) *Risk profile*: Generally investors are hesitant to invest in stock that they recognise to be a high risk. A high-risk borrower has a more limited range of lenders to obtain funds from.

- (e) *Government Backing:* Direct or indirect guarantees from the Government enhance the admission to the broadest investor range. The closer the organisation is to the Government, the lower the premium which is payable. Any form of intermediation adds to the costs of borrowing with private companies paying the highest premium. Generally government and semi-government organisations are perceived to be a lower risk than private or public companies. The Government has created this perception over the years through the debt-management policies implemented. A new borrower would not have the same status as these established organisations. Eskom, in particular, has earned a good reputation in the market.

- (f) *Legislation:* An organisation's borrowing capacity is sometimes affected by legislation as in the case of Eskom and the Rand Water Board. Government involvement with the borrower, through legislation, in policy issues and in operational decisions, enhances the security rating of the organisation and its investor base because of the perceived government commitment.

- (g) *Marketability:* Lenders more easily redeem an investment in marketable stock. Marketability gives the investor the assurance that the investment is exchangeable into cash at market rates. It is of importance that the borrowing organisation would have a strategy to promote the marketability of its stock (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16: 1 - 4).

A government guarantee may be seen as the most important factor to promote a borrower's status and ability to attract investors. An organisation with a full government guarantee or with the Government as its sole shareholder could demand a better rating than the best AAA private sector-listed company. SANRAL may initially have a weak balance sheet with a cash flow that is insufficient to service the debt required during the initial period and government support should be provided through loans and guarantees. It is important that interest and capital on private sector loans be fully covered by a government guarantee. SANRAL could then have access to the same markets as AAA private sector borrowers (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16: 9, 10).

The status of bills, bonds and securities issued could be identified as an evaluation criterion.

5.4.2 The status of bills, bonds and securities issued

The status of bills, bonds and securities issued could also be important factors in formulating and selecting policy alternatives for SANRAL.

Since 1989 insurance companies and pension funds have no longer been required to invest in prescribed investments. Prescribed investment needs were superseded by maximum investments in certain approved assets, for instance, a maximum of 20% of insurance companies and pension funds assets can consist of bills, bonds and securities issued. A total of 40% of assets may be invested in this way. In future, bills may qualify as liquid assets though they do not have marketability, they do have a rediscount status and can be pledged (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 3).

The spread of investors is another factor to be considered in developing policy alternatives.

5.4.3 Investment structure

The investment structure as evaluation criteria is described in this section.

In formulating a policy alternative it is of primary concern to decide in advance either to approach a wide or narrow spread of investors. A narrow spread of investors could be to the detriment of marketability, but is unavoidable in respect of minor matters, less than R100 million (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 3).

The policy analyst may be advised to evaluate and study the term structure of a loan portfolio to ensure the practical and realistic implementation of a toll road policy alternative.

5.4.4 Term structure

The term structure as evaluation criteria is described in this section.

The term structure of a loan portfolio is an important factor with regard to any policy alternative as it refers to interest rate projections and cash flow issues. The solvency of any organisation could be pressurised if all its loans should mature in the same year. The general rule is that the nett present value of a loan should not be more than R500 million. The ideal is to have short-term loans (3 - 4 years), medium-term loans (8 - 10 years) and

long-term loans (15 - 20 years). An interest rate policy and interest rate realisation should be an important consideration for SANRAL. Toll road income will only keep up with inflation either through traffic growth or tariff increases or a combination of both. The ideal is to have tariff increases at least in line with the consumer price index. Real rates of interest should be carefully determined as the past performance with regard to inflation and real interest rates is not necessarily an indicator of future trends (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 3).

Another factor to be considered in formulating a policy is the variety of instruments to be issued.

5.4.5 Variety of instruments to be Issued

The variety of instruments to be issued as evaluation criteria could also be considered.

Although the selection of the instruments to be issued is, to some extent, a function of the loan structure, it could be to the advantage of the borrower to have at least two or more bonds and loan stocks in the market. The structure of an organisation determines whether funding by means other than loan stock is correct (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 3).

The capital structure could also be of importance in formulating a policy alternative.

5.4.6 Capital structure

The capital structure as evaluation criteria is described below.

If an organisation is able to issue equity, it is essential to determine the most effective debt/equity ratio. The public may have concerns regarding a toll authority appearing to enrich its shareholders by virtue of toll road policies and this may influence the obtaining of shareholders funds at reasonable levels (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 4).

The financial structure may also need to be considered in developing policy alternatives for providing a primary national road network in South Africa.

5.4.7 Financial structure

The financial structure or capital structure may also be considered as criteria in this policy analysis process.

Capital structure could be distinguished from financial structure as the latter includes short-term debt and all other liability amounts. The potential interest rate may have an effect on an entities funding policy. If interest rates are projected to be reduced, the funding compilation will be weighted towards the short-term. This entails a continuous process in the analysis of the market (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 4).

The issue of discount and premium stock may also be of importance in developing a funding policy.

5.4.8 The issue of discount and premium stock

The issue of discount and premium stock as criteria for evaluation is described in this section of the dissertation.

The life cycle phase of an entity may verify whether funding will take place in the form of either discount or premium stock issue. When the cash flow is a constraint, the entity could issue low coupon stock. In the case of a well-established organisation where cash flow is not an important issue, this should not be a consideration. Some borrowers prefer a low coupon stock issued at a discount, as this could ensure more flexibility when interest rates decrease. Generally in South Africa investors are hesitant to invest more than nominal value for stock. The lender should also take into account the tax considerations. Stock can be retained and re-issued at various discounts if it implicates a low coupon; normally this is not advantageous if the stock has to be issued at higher than nominal value (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 4).

After the organisation structure and funding needs have been established, it will be essential to develop a comprehensive funding policy. The South African market, without disturbing interest rate patterns and the capability of other borrowers to fund their requirements, may handle the initial indications of needs. It is forecasted that in future access will be available to the overseas capital markets if needed. It should be noted that overseas investors prefer and

in some cases, are restricted to listed securities (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 5).

The nature of SANRAL's control over its assets could also be a relevant criterion in determining an effective and efficient funding policy.

5.4.9 Ownership and control over assets

Ownership and control over assets are described in this section.

The nature of the control over assets and flexible powers to dispose of assets, may contribute towards a more supple structure. Liquidity could be enhanced, should the Corporation (SANRAL) be able to trade non-liquid assets into cash or if off-balance sheet financing, such as leasing, rental or suspensive sale agreements are utilised (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure C: 5).

The primary criteria for analysing SANRAL's policy alternatives are being identified in the following section.

5.4.10 The primary criteria in analysing SANRAL's policy alternatives

Van Niekerk, (2006: Interview) is of the opinion that the following criteria could be relevant in the analysis of the policy alternatives:

- (a) Costs.
- (b) Financial risk.
- (c) Time.
- (d) Liability (responsibility).
- (e) South Africa's credit and financial rating (off-sheet or on-sheet financing with referral to government-guaranteed debt).
- (f) The borrowing capacity of SANRAL.
- (g) The capability to provide and maintain a primary national road network in South Africa.

Smit, (2006: Interview) and Van Niekerk, (2006: Interview) are of the opinion that it is not appropriate to quantify the objectives and the criteria of the analysis due to the complex

nature of toll road policies, and it was decided that the following primary criteria could be appropriate for the analysis of the policy alternatives:

- (a) The capability to provide and promote a primary national road network in South Africa.
- (b) Financial risk.
- (c) The borrowing capacity of SANRAL.
- (d) South Africa's credit and financial rating (off-sheet or on-sheet financing with reference to government-guaranteed debt).

The identification of the possible policy alternatives is the following procedure that could be applied in the policy analysis process.

5.5 Selecting the policy alternatives to be analysed

Smit, (2006: Interview) and Van Niekerk, (2006: Interview) are of the opinion that there are basically three policy alternatives to be considered in the developing and maintenance of national roads:

- (a) Non-toll roads.
- (b) SANRAL toll roads.
- (c) Concession toll roads (public-private partnerships).

SANRAL also has identified the above-mentioned policy alternatives for financing the development and maintenance of the South African national road network (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 16).

The study of all available literature and the interviews conducted, confirm the fact that the three above-mentioned policy alternatives are the only alternatives known for providing and developing the required primary national road network in South Africa.

Smit, (2006: Interview) says that the policy alternatives may be viewed as being different financial policies for providing, developing and maintaining the primary national road network.

The next procedure in the policy analysis process entails the analysis of the policy alternatives and the Non-toll road policy alternative is analysed in the following section.

5.6 Analysis of each policy alternative

After the possible policy alternatives have been identified and selected, the next procedure in the policy analysis process is the analysis of each policy alternative. The next section of this chapter is utilised to analyse the Non-toll road policy alternative, whilst the SANRAL toll road policy alternative is analysed in Chapter 6 and the Concession toll road policy alternative is analysed in Chapter 7 of this dissertation.

5.6.1 The Non-toll road policy alternative

Van Niekerk, (2006: Interview) says that Non-toll roads are financed through funds received from the National Treasury. The planning and design of the identified national road are first completed, and thereafter the tender process is implemented. The most appropriate tenderer (contractor) is then appointed to build the relevant Non-toll national road. The high cost of developing, building and maintaining a Non-toll national road could be problematic. Van Niekerk, (2006: Interview) is further of the opinion that the current limited funds allocated to SANRAL for the development, building and maintenance of Non-toll national roads make this policy alternative an unrealistic and unviable option for providing the required primary road network.

The exclusive funding source for the Non-toll national roads is the yearly allocation obtained from the general government budget as appropriated by Parliament through the National Treasury (this amounts to approximately R1,4 billion per year). Due to the demands for other public goods and services, the allocation of the funds for the expansion of the primary road network, which includes newly incorporated provincial roads, is limited and not sufficient to accomplish the objective of SANRAL. This additional expenditure results in a redeployment of available funds with a possible negative impact on the maintenance and development expenditure on the current national road network. SANRAL has identified the inadequate nature of the National Treasury allocation as a key risk (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 16).

In the following section the capability or capacity of the Non-toll road policy alternative to provide and expand the primary road network is evaluated.

5.6.1.1 The Capability to provide and promote a primary national road network in South Africa

The Non-toll national road infrastructure in South Africa needs considerable investment and regular reinvestments in order to develop and maintain a world class national road network to improve global competitiveness. In South Africa, more than half of the Non-toll road network is older than its intended design life. Therefore, it is vital for the growth of South Africa's economy and social development that the National Treasury dedicates the required funds for the development and maintenance of the Non-toll national road network. The limited funding available creates a constant challenge for the development of existing roads and asset maintenance (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 16).

SANRAL confirms in its annual report (The South African National Roads Agency Limited: Annual Report, 2005: 22) that in South Africa approximately 60% of all Non-toll national roads are older than its design life of 20 years. To enable SANRAL to attend to this problem situation, huge investments into development work (Capex) is needed. This however, is not possible at present funding levels, due to the fact that more than 65% of the budget is being required to maintain the ageing Non-toll road network for safe daily use. The expenditure on Non-toll roads for the 2004/2005 financial year has therefore been weighted towards maintenance expenditure (operational expenditure). See Tables 5/1 and 5/2 below (The South African National Roads Agency Limited: Annual Report, 2005: 22).

Table 5/1: Maintenance expenditure for the 2004/2005 financial year

Non-toll roads – maintenance expenditure			
Descriptions	Number of projects	Length (km)	Cost R'000
Routine maintenance	34	8 329	392 085
Periodic maintenance	23	790	151 122
Special maintenance	20	557	110 669
Total	77	9 676	653 876

Source: adapted from the South African National Roads Agency Limited: Annual Report, 2005: 25.

Table 5/2: Development expenditure for the 2004/2005 financial year

Non-toll roads – development (capital) expenditure			
Descriptions	Number of projects	Length (km)	Cost R'000
Strengthening	23	628	222 750
Improvements	17	189	49 446
New facilities	11	15	64 792
Total	51	832	336 988

Source: adapted from the South African National Roads Agency Limited: Annual Report, 2005: 25

The incorporation of provincial roads into the Non-toll road network increases the pressure on the SANRAL budget. The National Treasury allocations and the requested future funding do not indicate the required funds to develop and maintain the Non-toll road network (as depicted on Table 5/3). It is expected that supplementary funding will have to be procured in order to effectively plan, develop and maintain these roads (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 25).

Table 5/3: Requested versus actual National Treasury allocations

Description	Year (R'000)					
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Budget request	1 394 686	1 854 556	2 551 536	3 715 796	5 222 250	5 451 457
Budget allocation (National Treasury)	1 061 06	1 170 556	1 440 78	1 756 479	*1 901 060	*2 476 112
Budget deficit	333 622	684 000	1 110 747	1 959 317	3 321 190	2 975 345
Cumulative deficit	766 809	1 450 809	2 561 556	4 520 873	7 842 063	10 817 408

Notes: *Anticipated allocations from National Treasury.

Source: adapted from the South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 25.

It is apparent that the National Treasury allotments reflect a considerable deficit when compared with the actual funds required. It is within this background that SANRAL requires developing and maintaining the Non-toll national road network. The effect of inadequate funding levels is further enhanced by the fact that the cost of bitumen, which corresponds to

between 10% and 60% of the cost of maintenance actions, has increased considerably. The cost of bitumen at the coast in January 1998 was R744/ton and in January 2005 it was R1 855/ton. This represents an increase of 249% over which neither SANRAL nor the National Treasury has any control. Due to the changeability of the oil price, there seems to be no relief in the near future. The increase in the price of diesel has a comparable impact (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 25).

SANRAL's problem is not only limited to the current funding backlog; the persistent deterioration of Non-toll road pavements is also part of the problem. In practice this indicates that SANRAL's supposed funding capacity is only sufficient to effectively maintain approximately 40% of the Non-toll national road network (The South African National Roads Agency Limited: Annual Report, 2005: 35) and (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 8, 9).

Van Niekerk, (2006: Interview) is further of the opinion that the current limited funds allocated to SANRAL for the development, building and maintenance of Non-toll national roads make this policy alternative an unrealistic and unviable one in providing the required primary national road network in South Africa. Van Niekerk, (2006: Interview) says that Non-toll national roads may not be an effective policy alternative in providing and developing the necessary primary road network, but may always be relevant because it is not viable or practical to toll all the national roads in South Africa. Some national roads have an inadequate number of road users, which makes the implementation of toll road policies unviable, as the financial risk is too extreme.

The survey of the literature indicates that the Non-toll road policy alternative could be inadequate to provide and promote the required primary road network in South Africa. Approximately 60% of the Non-toll road network is older than its intended 20-year design life. SANRAL also made the statement that the current allocations from the National Treasury are only adequate to maintain approximately 40% of the Non-toll roads effectively. SANRAL, writes in another statement that approximately 65% of the budget is required to maintain the Non-toll roads for safe daily use. Table 5/3 also indicates that the financial backlog for Non-toll roads could be approximately R10,8 billion at the end of the 2007/2008 financial year. The above-mentioned information implies that the Non-toll road policy alternative produce inadequate funds to provide and develop the necessary primary road network for South Africa. The other criteria, namely the financial risks, the borrowing capacity of SANRAL and off-sheet or on-sheet financing are not relevant to the Non-toll road policy alternative as the relevant funds are allocated to SANRAL by the National Treasury.

5.7 Conclusion

This chapter was utilised to provide an introduction to the analysis of the policy alternatives at SANRAL's disposal and this chapter of the dissertation was further devoted to the following: the identification and clarification of the problem, identification of the objectives, selecting of the primary evaluation criteria, and the identification of the possible policy alternatives. This chapter was also utilised to analyse the Non-toll road policy alternative. The analysis indicates that the Non-toll road policy alternative may be ineffective and insufficient in providing the required primary road network in South Africa.

The analysis of the Non-toll road policy alternative indicates that this policy alternative is not effective or efficient in providing South Africa with a primary national road network due to financial constraints. The Non-toll road policy alternative is neither effective in maintaining the non-toll roads within the primary national road network as has been proved through past experience. The R1,4 billion received from the National Treasury on an annual basis is not sufficient to maintain more than approximately 40% of the non-toll road network. No funds are generated by this policy alternative to contribute to the required primary national road network of approximately 20 000 kilometres.

Chapter 6 of this dissertation is utilised to analyse the SANRAL toll road policy alternative in terms of the criteria identified in this chapter. Chapter 7 is used to analyse the Concession toll road policy alternative.

CHAPTER 6

THE SANRAL TOLL ROAD POLICY ALTERNATIVE

6.1 Introduction

This chapter of the dissertation is dedicated to the analysis of the SANRAL toll road policy alternative. This policy alternative may be viewed as a funding mechanism in the development and maintenance of national roads. The purpose with this chapter is to indicate that the SANRAL toll road policy alternative could enhance the development and maintenance of the national road network in South Africa. In this chapter attention is given to the following: the history of toll financing, modern toll financing in South Africa, background to the implementation of SANRAL toll roads in South Africa, the criteria for feasibility, funding mechanism for SANRAL toll roads established as part of the road privatisation initiative, the usage of collected revenues, the role of the public and private sectors, the conventional mechanism (design, construct, operate and maintain) by the private sector on a competitive basis, the lessons learnt from the build-operate-transfer concessions, the need to develop and maintain SANRAL toll roads, an integrated road management system, the economic rationale for SANRAL toll road financing, the potential financial contribution of SANRAL toll road financing, the economic viability criteria for new SANRAL toll road projects, the criteria for financial feasibility, financing policy changes resulting from the 1994 toll road refinancing strategy, international public sector road authority models, toll plaza operations and maintenance contracts, financing sources, fuel levy versus toll financing, debt-related methods, anticipated results of the SANRAL toll road policy alternative, the economic acceptance of SANRAL toll roads, political acceptance of SANRAL toll roads, tolling existing and new freeways could create a self-financing primary road network, the Toll Road Investigations Co-ordinating Committee, and the current situation regarding SANRAL toll roads. The last section of this chapter is utilised to analyse the SANRAL toll road policy alternative in terms of the primary criteria, which includes: the capability to provide and promote a primary national road network in South Africa, financial risk, the borrowing capacity of SANRAL and South Africa's credit rating (off-sheet or on-sheet financing with referral to the Government's guaranteed debt).

Van Niekerk, (2007: Interview) says that with SANRAL toll roads, SANRAL is responsible for funding the development, construction and maintenance of the toll road. In practice this implies that SANRAL should obtain the necessary funding for the road by virtue of loans and bonds from the money and capital markets. SANRAL may obtain the necessary loans and

bonds by virtue of a government guarantee or they can obtain the funding themselves as SANRAL is locally and internationally accredited. This implies that a SANRAL toll road could be developed and built without affecting South Africa's international credit and financial rating (off-sheet financing with reference to government-guaranteed debt). The toll levy is generally utilised to redeem the bonds or loans, whilst the operating and maintenance of the SANRAL toll road could be contracted out.

SANRAL has obtained an international credit rating of Aa2.za for long-term loans and a credit rating of P-1.za with stable outlook for short-term loans. SANRAL's local financial rating is zaAA (long-term) and zaA1+ (short-term) (Essa: 2007).

The history of toll financing is described in the following section of this chapter.

6.2 History of toll financing

The idea of charging tolls for passage over property is almost as old as civilisation itself. The Assyrians, for example, are known to have created one of the initial toll roads from Syria to Babylon. In South Africa, during the nineteenth century, tollgates were constructed in most of the provinces in South Africa. The Governor of the Cape Colony introduced toll on roads as early as 1812 to raise funds for road maintenance. Toll was also levied on roads in the provinces of Natal and Orange Free State up to the end of the 19th century. At the start of the 20th century the introduction of the locomotive limited the requirement for road-based transport and tolls were abolished in South Africa (Smit & Jamieson, 1995: 1).

Since the Second World War, various countries were faced with the requirement to supply high-capacity road systems capable of supporting particularly heavy traffic on routes that had not been designed for such traffic. Very few countries were in a situation to finance such large and expensive road projects from their national budgets. Raising huge loans for a particular sector, such as roads and guaranteeing these from the national budget would require that priority would be allocated to this sector for several years. Parliaments are, however, unwilling to accept such a loss of freedom in the determination of national priorities in the annual budget process. The result was that various European countries as well as the United States of America (USA) opted for toll financing (Smit & Jamieson, 1995: 1).

The next section of this chapter is utilised to describe the background to the implementation of SANRAL toll roads in South Africa.

6.3 Background to the implementation of SANRAL toll roads in South Africa

This section of the dissertation describes the background to the implementation of the SANRAL toll road policy alternative in South Africa.

Since the *National Roads Act, 1971 (Act 54 of 1971)* was amended in 1983, the National Transport Commission (NTC), a road authority prior to SANRAL, approved a few toll roads. The first SANRAL toll road (then known as State toll road) to be declared was a section of National Route 2 (N2), the Tsitsikamma toll road. The NTC also consented that the funding borrowed from the capital markets would be repaid from toll over a 20-year period and that the initial interest instalments would be paid from the National Road Fund (NRF). The NTC further decided that contractors under the supervision of the Department of Transport would undertake all works with regard to the toll road, including the operation of the toll plazas. In June 1984 this toll road opened for public use. Other SANRAL (State) toll roads were opened in March 1986, being the Mariannhill toll road and in July 1986 the Kranskop toll road. Further SANRAL (State) toll roads, which became operational in the period between 1986 and 1990, were the Huguenot toll tunnel in March 1988, the South Coast toll road in July 1990 and the Magalies toll road in February 1991 (Smit & Jamieson, 1995: 5).

Van Niekerk, (2007: Interview) says that National Route 1 (N1) between Johannesburg and Bloemfontein is also a SANRAL toll road, whilst National Route 17 (N17) (between Springs and Ermelo) is a new SANRAL toll road project and in the process of being constructed. National Route 1 (N1) between Polokwane and Beitbrug is also a SANRAL toll road.

For the purposes of this dissertation it is also of importance to describe modern toll financing in South Africa.

6.4 Modern toll financing in South Africa

Modern toll financing in South Africa is described in this section of the chapter.

Available funds of the roads authority to develop and maintain national roads declined between 1973 and 1982, to 60% of the 1973 value in real terms. This was due to the increase in costs of road works in that period and the insufficient increase in the allocated fuel levy. Constant attempts to obtain an increase in the fuel levy were only moderately successful. In view of the Government's economic policy at that time, it was accepted that no considerable increase in the financing of national roads would be realised in the foreseeable future from the traditional supply of revenue, that is, from the fuel levy. Road authorities

began to investigate supplemental or additional sources of income. In 1981 toll financing was one of those policy alternatives that received extensive attention (Smit & Jamieson, 1995: 2).

In the latter part of the 1970s the Minister of Finance requested the Department of Transport to examine the use of a toll road policy in South Africa. Administrators visited overseas countries to examine toll road systems and this resulted in the Department of Transport announcing “that a toll policy for financing road projects was technically feasible and could make a modest contribution to road funding in South Africa”. A parliamentary committee analysed the suggestion to introduce toll roads in South Africa and advised in June 1982 that a toll road policy should be introduced in South Africa. It reported that a few principles were worth analysing. These were:

- (a) A toll policy conforms to the principle of user-charging which had already been in use through the fuel levy and was accepted for the financing of roads in South Africa.
- (b) The toll tariff should be differentiated according to vehicle mass and type.
- (c) An alternative route should be available for those road users unwilling to utilise the toll road.
- (d) Government involvement in toll road funding is important for co-ordinating of the investment in toll road projects and for priority determination in the distribution of the country’s resources, and toll income should be directly utilised for the costs relating to toll projects.
- (e) A toll road policy involves loan financing and because of the expected short-term deficit, bridging funding provision would be necessary (Smit & Jamieson, 1995: 2, 3).

The legislation for toll roads is contained in the *South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998)*. In terms of Sections 25, 26, 27, 28 and 33 of the last mentioned Act, SANRAL has the following powers and responsibilities with regard to toll roads:

- (a) SANRAL, within the framework of government policy, is responsible for all strategic planning with referral to the South African national roads system, as well as the development, building, operation and maintenance of national roads in the Republic of South Africa. It is further responsible for the funding of all those functions as to ensure that the Government’s objectives regarding national roads are achieved.

- (b) SANRAL may appoint any private person or institution, in terms of a contract, in order to attend to any work on behalf of SANRAL with regard to the development, construction, operation and maintenance of a national road.
- (c) SANRAL, with the consent of the Minister of Transport, may declare any specified national road to be a toll road.
- (d) SANRAL may levy and collect a toll, the amount of which has been determined and announced, from any toll road user.
- (e) SANRAL, with the consent of the Minister of Transport and in consultation with the Minister of Finance, may raise funds by means of loans and bonds from any source including the money and capital markets.

In terms of Section 27(4) of *the South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998)* the Minister of Transport will not give consent for the declaration of a toll road, unless:

- (i) SANRAL has given notice of the proposed declaration.
- (ii) SANRAL has given an indication of the approximate location of the toll plaza considered for the proposed toll road.
- (iii) SANRAL has invited interested persons and parties to comment and make recommendations regarding the proposed declaration and the location of the proposed toll plaza.
- (iv) SANRAL has requested the relevant Premier to comment on the proposed declaration and any other matter relating to the toll road.
- (v) SANRAL has given the affected municipalities the same opportunity to comment.

Once the toll road has been opened, the toll collected must be reserved in a separate account in respect of that particular toll road and paid into a fund together with all interest. The toll is to be utilised for the funding of all the development, constructing and operating costs pertaining to the particular toll road (Smit & Jamieson, 1995: 4).

The criteria for feasibility with regard to SANRAL toll roads are described in the following section.

6.5 Criteria for feasibility

SANRAL toll roads are viewed as being feasible even though they are not fully self-financing and have been chosen on the basis of the following criteria:

- (a) An economic rate of return, after providing for toll-related capital and maintenance costs, of higher than 15% per annum.
- (b) The SANRAL toll road has to be able to support the capital market loans from future revenue in such a manner that these loans would constitute an acceptable contribution to the outstanding project cost. An acceptable contribution from loans has been determined to be at least 30%.
- (c) The cost of toll collection over the project life cycle has to be reasonable. Approved SANRAL toll roads have in practice achieved costs of collection of below 30% of gross toll income and this compares favourably with international standards (Smit & Jamieson, 1995: 7).

The funding mechanism for SANRAL toll roads, being chosen for privatisation is described in the following section of this chapter.

6.6 Funding mechanism for SANRAL toll roads established as part of the road privatisation initiative (1984-1990)

The funding mechanism for SANRAL toll roads, established as part of the road privatisation initiative, could also be relevant in this policy analysis process.

The toll routes chosen for the road privatisation initiative were not considered to be fully self-supporting. The funding mechanism for these roads, therefore, had to contain methods to attain and maintain financially feasible projects from the point of view of the private sector companies. This was accomplished by the State, that instead of providing financial assistance, transferred several of the adjacent constructed national road sections, funded by the National Road Fund, at no cost to the private companies to charge toll from the road users. Generally the charging of toll followed upon considerable rehabilitations to these

roads. The work was financed through loans, supported by government guarantees and procured by the private companies (Smit & Jamieson, 1995: 13).

The final concession agreements among the State and the private companies were drafted in 1989, on condition that the enabling legislation be approved. This legislation would have made it possible to legally grant private sector companies concessions to finance, build and operate a national road as a toll road for a certain period and then transfer the road back to the State. The enabling legislation was submitted to Parliament in 1988 and in 1990, but was discarded, primarily because of public concerns regarding the tolling of existing roads. The South African Roads Board (SARB) therefore took over the financial responsibility for the toll roads and the loans procured by the private companies (Smit & Jamieson, 1995: 13).

Van Niekerk, (2007: Interview) is of the opinion that SANRAL toll roads could be more acceptable to the general public due to the fact that Concession toll roads may be regarded by some road users as a mechanism to generate profit for a third party.

The usage of toll revenues collected at the SANRAL toll road plazas may be relevant to this study and of importance to the general public.

6.7 Usage of collected toll revenues

All SANRAL toll road income accumulates to the SANRAL Portfolio Fund, and the Minister of Transport (on recommendation of SANRAL) determines all toll tariffs. The primary objective remains that the construction of new SANRAL toll roads should only be financed by means of capital market loans. SANRAL toll roads ought to be self-financing in the longer term by means virtue of the user-pay principle. This is in line with the values contained in the Reconstruction and Development Plan, where needless pressure on the fiscus is avoided. All collected toll income is being accounted for by the use of electronic devices and is subjected to the examination by auditors. The income is deposited into bank accounts, which exists for each SANRAL toll road project. The collected funds are utilised to finance the following expenses:

- (a) Toll plaza operator's fees.
- (b) Toll plaza maintenance costs.
- (c) Head Office administration costs.
- (d) Interest costs on the relevant loans.
- (e) Redemption of the loans (Smit & Jamieson, 1995: 22).

The role of the public and private sectors with regard to SANRAL toll roads could also be of importance and is described below.

6.8 The role of the public and private sectors

In terms of current legislation, SANRAL toll roads are national roads, administered by themselves, and subject to the Minister of Transport's consent with regard to certain important decisions. A SANRAL toll road is in practice a financing structure and should be seen as a business, for which benefits of private sector influence, such as efficiency and innovation, should be utilised. A SANRAL toll road is also fundamentally a public service with compound effects on the use of land, economic activity, government finance and the environment. Whilst the public may benefit from the efficiency and effectiveness with which SANRAL toll roads are being implemented and operated, the public also has a right to certain guarantees, such as access to land and a reasonably priced public service (Smit & Jamieson, 1995: 23).

It should be acknowledged that SANRAL toll roads are a merit good. This implies that the public regards SANRAL toll roads to be so important that everyone should have access to them. Although the free market's rational mechanism should supply roads in an economically efficient manner, the public requires the provision of SANRAL toll roads to be equitable and to achieve social-economical objectives. Consequently, the Government is responsible for the control of the allocation of scarce resources to road provision, to ensure that public objectives are accomplished as far as possible (Smit & Jamieson, 1995: 23).

SANRAL toll roads could be designed, constructed, operated and maintained by private sector companies as can be seen from the following section.

6.9 The conventional mechanism (design, construct, operate and maintain by the private sector on a competitive basis)

The private sector plays a significant role in SANRAL toll roads even though SANRAL retains ownership of SANRAL toll roads; the private sector could be involved in the following:

- (a) The design of the road and toll plazas according to SANRAL's standards and specification by using contractors reimbursed on time/cost or statutory fees scales.
- (b) The construction of the SANRAL toll road and toll plazas by making use of contractors on an open tender basis.

- (c) The operation and maintenance of SANRAL toll roads by private companies under the control of SANRAL, after the contracts have been awarded by the competitive tender process.

The shortcoming of SANRAL toll roads is the extent to which government-financed toll roads can be employed to supply road infrastructure is restricted by what loans the Department of Finance is prepared to approve (Smit & Jamieson, 1995: 24).

The advantages of the SANRAL toll road alternative is:

- (a) The political nature of the Government ensures the opportunity to express dissatisfaction with actual toll schemes or tariffs, subsequently, SANRAL toll roads are a reasonably priced service from a road users point of view.
- (b) Since private sector participation takes place on a competitive basis in the construction, operation and maintenance of SANRAL toll roads, private sector effectiveness and efficiency is attainable in the implementation of these projects (Smit & Jamieson, 1995: 24, 25).

The lessons learnt from the concessions granted in the 1980s may promote the importance of SANRAL toll roads in the future.

6.10 Lessons learnt from the build-operate-transfer concessions granted in the 1980s

In South Africa a very limited number of toll road projects are completely self-funding. The reasons for this could be the low traffic volumes on national roads, as well as the public's unwillingness to pay a market-correlated toll. Subsequently, with a few exemptions, it is usually necessary for the Government to provide equity to the toll road projects. This could be by means of funding provision, an annual subsidy, or by yielding the use of current assets (tolling existing roads). Funding is a significant portion of any toll road's cost. Since the South African Roads Board (SARB) took responsibility for certain toll road projects in April 1991, it has confirmed that the Government is capable to obtain the required capital and money market loans at lower interest rates than the private companies had been able to. Funds for private companies are available, though at a higher price. Private sector-driven projects are generally developed and constructed more rapidly than government projects where bureaucratic activities could delay the completion of a toll road project (Smit & Jamieson, 1995: 26).

Van Niekerk, (2007: Interview) says that SANRAL toll roads imply that SANRAL is responsible for obtaining the necessary funding required for the development, building, maintenance and operation of the toll roads. By contracting out the development, building, maintenance or operation of a toll road, SANRAL is still in a position to utilise the effectiveness and efficiency of private-owned companies.

The need to develop and maintain SANRAL toll roads is described in the following section of this chapter.

6.11 The need to develop and maintain SANRAL toll roads

Road transport is the major means of transport in most countries and investment in roads accounts for a considerable part of the Government's stock of public capital. The replacement costs of main roads in developing countries are usually greater than the investment in power provision in these countries. SANRAL toll roads are essential economic assets and need to be effectively managed to ensure they generate value for money. The conservation of SANRAL toll roads is vital in order for South Africa to uphold economic growth and become more competitive internationally. According to a World Bank discussion report, most roads in developing countries worldwide are badly managed, inadequately maintained and under-funded. Allocations for road maintenance have generally been so low that enormous sums of the road infrastructure capital stock have been eroded. This state of affairs is also starting to transpire in South Africa (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 1: 7).

South Africa has entered an era, during which extraordinary changes, are taking place, not the slightest of which will be in the roads arena. With regard to the move towards rectifying the socio-economic inequities of the past, mostly in the provision of roads to the less developed communities in both rural and urban areas, it is expected that SANRAL toll roads will put up with a decrease in funds from the normal sources, for example the National Treasury. Taking into account that South Africa's important industries are at the centre of the country and that export is an important factor influencing economic growth, an effective and well-developed SANRAL toll road network is a requirement for economic growth (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 1: 7).

Smit, (2006: Interview) and Van Niekerk, (2007: Interview) are of the opinion that national roads and toll roads will in future be less dependent on funding received from the National Treasury and that SANRAL toll roads will accomplish the continual development and maintenance of national roads by means of bonds and loans from the capital markets. SANRAL may utilise the government guarantee to obtain the required funds or can acquire the necessary capital itself, being internationally accredited.

The importance and relevance of an integrated road management system in South Africa is described in the following section.

6.12 An integrated road management system

SANRAL's predecessor, the South African Roads Board (SARB), introduced an integrated road network management system that incorporates the principles of strategic management in order to develop the road system. This process is appropriate at present due to the amendments to conventional and operating methods within the public sector (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 2: 1).

Road funding is one of the important strategic management aspects, which requires to be addressed in order to attain an integrated road network management system. In the past 20 years financing for roads have come from an allocated road fund (via a fuel levy) and toll roads, and in recent times directly from the National Treasury. The availability of funds for new national roads and provincial roads has decreased gradually over this period from approximately R3 000 million in 1975 to about R150 million in 1994 (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 2: 1).

SANRAL toll roads are an element of the funding strategy, which requires to be attended to within the integrated system. Toll financing is gaining in significance and its value has increased considerably in South Africa since the first toll road opened in 1984, especially with regard to the provision of new roads. Various countries are now considering or implementing a process to commercialise their important primary road network by levying for the utilisation of roads. This generally enhances more market discipline and the road network takes on the features of private goods. The two most preferred mechanisms of pay-as-you-go systems are toll roads and or dedicated road funds (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 2: 1).

The minor primary and secondary roads, which give access to all, are mostly funded through general taxation at national, provincial or local level. These roads are treated as public goods on the foundation that users cannot be excluded from utilising them. Road users pay taxes, which are accredited to the general revenues and road expenditures are then funded by means of budget allocations that are determined as part of the annual budgetary process. There is no obvious user-charge and there is no correlation between road taxation, the cost of road usage and expenditures on roads. These two levels of road-financing methods, namely, user-charging and tax revenues should coexist within the similar financing strategy. The verdict that is needed, however, is which mechanism is the most appropriate to accomplish the objectives of the overall integrated network strategy (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 2: 1).

The Cabinet has determined that roads are one of the six economic priorities of South Africa. In order for the requirements and restricted financial resources to be reconciled, a holistic vision to road funding is needed. Strategic financial development requires a corresponding of existing actions and long-term objectives. Based on a view of future requirements, a policy is needed that will identify the necessary financial resources and mechanisms of allocating it (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 2: 2).

Van Niekerk, (2007: Interview) says that in practical terms, tax revenues would not be sufficient to provide the primary road network required in South Africa and that the utilisation of the SANRAL toll road policy alternative could enhance the development and maintenance of the primary national road network in South Africa.

There is an economic rationale for promoting SANRAL toll road financing in South Africa.

6.13 The economic rationale for SANRAL toll road financing

The economic rationale for SANRAL toll road financing is described in this section of the chapter.

6.13.1 The case for road user charges

The fundamental nature of the case for road user levying, of which toll financing is a very direct method, is presented in the levy, for the use of the road should calculate the value of the resources spent in providing that service. With a user levy reflecting the cost, the road

user may make a decision whether his interests are best served by “buying” the road journey or by acquiring some other goods, and his funds will be dedicated to the use that most satisfies the individual. If prices mirror costs, resources will be efficiently distributed between road journeys and other things and between one kind of road and another (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 4).

There are economic reasons why only congested national roads should be tolled.

6.13.2 Typical economic arguments on why only congested roads should be tolled

The typical economic arguments on why only congested roads should be tolled are described below.

6.13.2.1 Short run marginal cost pricing

The short run marginal cost pricing is attended to in this section of the dissertation.

In accordance with the terms of the short run marginal cost pricing, the cost of a vehicle trip comprises the following:

- (a) The private cost of the trip: This includes the operating cost consisting of fuel, wear and tear and even driver remuneration, all of which the vehicle owner is legally obliged to gather, so the private cost is self-financing.
- (b) The social cost of a vehicle trip with the following elements:
 - (i) Variable road maintenance cost funded by SANRAL: If there is no congestion, this could be the only social cost, which should be considered part of the cost of the journey. It is important to note that the construction and fixed maintenance cost of the national road are not part of the cost of a trip since no portion of these resources can be saved if a motorist does not commence an additional trip. The capital invested in the national road (highway) was dedicated in the past and are therefore sunken costs.
 - (ii) Congestion costs: If an additional vehicle journey is undertaken on a road in a congested situation, this vehicle could get in the way of other vehicles utilising the

national road and may cause their costs to increase as they spend more time in traffic-jams, which incur an elevated vehicle operating cost per km in the congested traffic.

The optimal economic utilisation of resources requires prices to be set equal to marginal costs. The objective of toll levying should then be to properly obtain the major social costs from the road user. If toll levying is too low, too many journeys will be undertaken, adding to the congestion. It may be argued that toll levies do not sufficiently reflect the congestion cost in large cities and that congestion and low speeds are the consequences. If toll levies surpass the sum of the changeable road maintenance cost and the congestion cost, the vehicle owner will probably not undertake some journeys due to the high tax. Subsequently, the advantages provided by the national road will not entirely be utilised. It could be stated that such conditions are a characteristic of most interurban and rural national roads (highways). There are many examples available of the under-utilisation of some rural toll roads. Road user toll charges should therefore mirror the social cost elements of a vehicle journey in order that the private cost of the vehicle owner, including the exact toll charge per vehicle and kilometre, will reflect the consequences of the decision to utilise the national road (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: Page 5: 6).

The rural and interurban roads are described in the following section of this chapter.

6.13.2.2 Rural and interurban roads

This section provides information on why rural and interurban roads should not be tolled.

Several national roads are similar to “pure public goods” in that one user’s pleasure of using the good or service is not prohibiting other users from enjoying it. In practical terms it seems that various rural and interurban national roads do in fact represent “public goods”, because the congestion is so uncommon that it can be ignored. For such national roads no toll levy should be charged for their use. Due to the fact the utilisation of these national roads is a “public good”, the provision of the road involves the general principle of investment choice; that national roads should be constructed so as to maximise the surplus of benefits over total costs. Equity, on the other hand, suggests that a toll levy should be charged in ratio to the benefits received from a national road system. Economic theory, however, requires that it should be avoided to charge any levy on the utilisation of an uncongested road (Tolplan

(Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 6).

6.13.2.3 Congested urban roads

There are some facts that could motivate why congested urban roads could be tolled.

As has been stated in preceding paragraphs, the optimal economic use of resources requires prices to be set equal to marginal costs. On congested urban national roads, the road user cost does not pay the complete marginal cost he or she imposes. Even if the road user pays the “average” marginal cost of the national road system the road user will still not pay the complete cost of the congested road utilisation. Whilst road users pay for their own vehicle operating costs and travel delays, they also create costs and delays on other road users, and may increase environmental pollution and even accident risk, for which the individual vehicle owner is not charged. On congested roads private costs may be lower than social costs, nevertheless demand is based on private costs only. A toll equivalent to the disparity between private and social costs, may decrease demand to its “economic” level. Congestion toll requires the road user to pay the (marginal) cost of utilising the congested national road, including “external” costs (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 7).

To be precise, it is necessary to test the flexibility of demands for journeys on congested national roads. Charge too much and the result may be the under-utilisation of national roads. The toll levy is a method for selling limited road space. Since congestion is unlikely to happen on certain interurban roads, it may be argued from an economic point of view, that no toll financing should be applied to such roads. In theory, road user charges (excluding tolls) should afford enough funds to finance road maintenance of necessary roads, constructed to sufficient capacity and government budgets should be able to finance the needed expenditure to make roads last as long as proposed and achieve the potential benefits (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 8).

The fact that SANRAL toll roads may enhance road development is described in the following section.

6.13.3 SANRAL toll roads enhances road development

In reality, toll financing is utilised to permit the construction of particular national roads to commence earlier than if general tax revenue had to be relied upon. Subsequently, the earlier manifestation of user advantages may be seen as a benefit of SANRAL toll roads. The extent, to which SANRAL toll roads can be utilised to bring forward the achievement of the user benefits of a new toll road, depends upon the availability of finance from other than government sources. In practice, also, finance for maintenance work is sometimes not available when needed. The use of toll income from a particular toll road is generally prioritised to warrant sufficient maintenance (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 8).

The tolling of high serviceability roads versus national standard roads is explained in the following section.

6.13.4 Tolling of high serviceability roads versus national standard roads

The following section differentiates between high serviceability and national standard roads.

6.13.4.1 The distinction between high serviceability and national standard roads

Practical experience has proven that some road users could be willing to pay toll for high serviceability roads that met their needs.

South Africa's national road system should offer a particular minimum level of service. This should be appropriate to the demands of road users. The minimum level of service should be proportionate with South Africa's financial capacity. The appropriate level of service will change from time to time as a result of fluctuations in the economy. SANRAL is responsible to establish the appropriate level of service, by defining a national standard for roads in general, which balances existing demand and supply levels. It is definite that certain groups of road users command higher standards of roads, and are competent to compensate for them. In a free market economy it is appropriate to permit such affordable preferences. Provision should hence be made for the provision of such high serviceability roads together with national standard roads. The last-mentioned should serve to keep road standards in South Africa in line with circumstances in economy, whilst the high serviceability roads should allow free market preferences to be exercised (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 9).

National standard roads can be defined as roads that match to standards established by SANRAL, or that by now exceed the standards by virtue of higher standards having existed in the past. High serviceability roads are roads that will, as a result of either upgrading or new construction, come to exceed the national standards. Whether a road is to be classified as a high serviceability road will depend on the physical standards it has, its traffic volume capacity, the legal speed limit that is imposed and the other roads or transport modes for which it is a replacement. High serviceability roads should include those roads that have been constructed in the past clearly in order to offer uncommonly high-level facilities, usually requiring particular funding activities. Certain existing roads may instantly be considered to be high serviceability roads due to the fact they were constructed specifically for this objective (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 10).

When new roads are to be built, the distinction as to whether they are high serviceability or national standard roads should depend on the objective they are to serve. It is accepted that it is the Government's task to provide the public with an acceptable level of roads. Newly built national standard roads consequently will be prevailing throughout the early part of the economic materialisation of a country. These roads may at first carry limited traffic that cannot afford the yoke of high direct costs, so initially commercial provision of roads is not an option. Then there are arguments for supporting road building out of general tax revenues, as the advantages of roads are spread throughout the community. New high serviceability roads, in contrast, are found in established communities, which have a well developed economic system. Access to these communities already exists in the form of a well-established road network of reasonably high quality. It may be possible that certain of those roads are beginning to provide declining serviceability levels, mainly due to congestion. Subsequently there is a demand for upgraded roads. This demand usually emerges from particular road user groups and not from the general public. It will be appropriate to provide such upgraded road facilities, but not at public expense (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 10).

There are rational arguments why high serviceability roads should be tolled.

6.13.4.2 High serviceability roads should be financed from tolls

The rational reasons why high serviceability roads should be tolled are provided in this section.

Governments should attempt to enhance efficiency in the economy. An efficient policy is one that maximises individual economic welfare. Toll levying is a method achieving efficiency, because it matches the supply of resources, in this context roads, to sources of effective demand. Such rationing is vital to the accomplishment of efficient economic results and is the primary factor that causes free market mechanisms to be efficient in their resource allotment. The provision of high serviceability roads is in essence a commercial form of government activity. High serviceability roads are not really public goods due to the fact that people can be excluded from the receipt of any advantages (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 12).

In certain circumstances, toll levying has various benefits:

- (a) It assists investment decisions by the Government. Existing roads have a tendency to be over-utilised and become congested if they are provided free, resulting in demands for extreme investments and increased capacity.
- (b) Adequate toll levying that limit the utilisation of roads avoid inefficiency in the form of congestion and distorted locational decisions.
- (c) Toll levying enables tax revenues to be used for other high priority societal needs.
- (d) The general taxpayer should not be responsible to finance a service that will only benefit certain individuals, unless toll levying is used, it could also result in severe burdens on low-income groups.
- (e) Toll charges could facilitate optimal allocation of traffic between roads and other transport modes (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 12).

Subsequently, toll levying could be an appropriate method to have high serviceability roads controlled by the Government (SANRAL), but funded as private goods, which they really are. Were it not for practical problems and the consequent expenses, levying tolls could be viewed generally as the most effective method of ensuring efficient road provision. Frequently, expense prevents their use, but with high serviceability roads, which are provided primarily for the benefit of road users in the higher income categories, and have certain physical features, this objection is not relevant (Tolplan (Pty) Ltd: Discussion

Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 12).

Van Niekerk, (2007: Interview) is of the opinion that it may be appropriate to utilise the SANRAL toll road policy to develop and maintain high serviceability roads in South Africa. It is therefore a possibility that the proposed primary national road network in Gauteng could consist of various SANRAL toll roads. Concession toll roads could be invaluable due to the financial risks its shareholders have to consider. The availability of alternative roads and the Gautrain could be seen as possible financial risks for incorporating Concession toll roads into the Gauteng primary road network.

The potential financial contribution of SANRAL toll roads should also be described.

6.14 The potential financial contribution of SANRAL toll road financing

The potential financial contribution of the SANRAL toll road policy alternative is relevant to this study and is described in this section.

The possible impact of SANRAL toll roads on the national road network is dependent upon the extent to which toll financing can contribute funding to the initial capital cost of the road facility to be financed. The South African toll funding system is based on the principle that capital and money market loans will be redeemed by the nett toll income. SANRAL toll roads could provide a mechanism for the partial or complete finance for necessary toll road projects, which may otherwise not be possible to fund. The practical principle is that a toll levy is paid by the road user for the use of a high serviceability toll road, while allowing him or her the option to choose an alternative national standard road. In order to be financially conservative and to obtain a high attraction rate to the toll roads, toll tariffs on South African roads have to be set a level where the toll levy amounts to a portion, only, of the total toll cost, when evaluated against the best alternative route. If an analysis is made of the user benefits in economic analysis and toll income in financial analysis, it becomes evident that SANRAL toll roads may be economically feasible, but not necessary entirely self-funding (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 3: 13).

Van Niekerk, (2007: Interview) is of the opinion that a SANRAL toll road could be self-funding if sufficient finance is obtained by means of bonds and loans sourced from the capital and money markets with reference to a specific toll road project.

There are criteria for determining the economic viability of new SANRAL toll road projects.

6.15 Economic viability criteria for new SANRAL toll road projects

The economic viability criteria for new SANRAL toll road projects could be an important consideration for the implementation of the SANRAL toll road policy alternative.

In order to warrant the optimal utilisation of scarce capital resources in South Africa, a fundamental principle underlying all SANRAL toll roads is that the toll project has to be economically viable. This implicates that, after contemplation of the effects of levying toll, namely lower user benefits resulting from traffic diversion and toll-related capital, operating and maintenance costs, the SANRAL toll road project should still have satisfactory indices of economic merit, namely a positive nett present value and an adequate internal rate of return on invested capital. In the early eighties a minimum of an 8% per annum economic internal rate of return was viewed as being good enough. Currently a 15% per annum economic internal rate of return is being utilised in view of the strict budget constraints (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 4: 1).

There are also financial feasibility criteria for evaluating possible SANRAL toll road projects.

6.16 Financial feasibility criteria

Given the viewpoint in respect of the self-funding capacity of toll projects, possible SANRAL toll road projects have been evaluated financially on the following basis:

- (a) A reasonable percentage of the initial project capital cost has to be financed by means of capital and money market loans, which can be repaid from the forecasted future nett revenue of the project. This has led to the concept of the loan supportable by revenue (LSR) of a toll project that is the amount of capital market loans that could be procured to help with the funding of the initial capital cost.
- (b) A reasonable contribution from loans has been calculated as at least 30%.
- (c) The envisaged cost of toll collection over the project life has to be reasonable too. Approved toll road projects, in practice, accomplished costs of collection of below 30% gross toll income and this measures up to international standards (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 4: 2).

There were financing policy changes resulting from the 1994 toll road refinancing strategy.

6.17 Financing policy changes resulting from the 1994 toll road refinancing strategy

Financing policy changes resulting from the 1994 toll road refinancing strategy is explained in this section of the dissertation.

Prior to 1994 the National Road Fund (NRF) income had continued to decline in real terms, and the effectiveness of the provision by the NRF of medium and long-term loans to SANRAL toll road projects from its allotment by the Government was questioned increasingly. In addition, it became obvious from a comparison of envisaged and actual private sector debt levels of the road authority, that the SANRAL toll roads are performing considerably better than required to repay the private sector loans. It was observed that the 20-year payback period was somewhat short in comparison with international practice where 30 years and longer were quite acceptable (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 4: 4).

A re-financing strategy was, therefore, developed in terms of which each SANRAL toll road project, to its loan-supporting capability, would procure supplementary private sector loans to repay the National Road Fund for its loans. Subsequently, the following significant policy changes resulted:

- (a) NRF long-term loans to new SANRAL toll road projects will be provided from the repayment of NRF medium- and long-term loans by existing SANRAL toll road projects rather than from the revenue allocated to the NRF by the Government. The existing SANRAL toll road projects financed these repayments by procuring supplementary capital and money market loans.
- (b) No NRF medium-term loans would be provided to SANRAL toll road projects to finance interest in the initial years. SANRAL toll roads had to finance shortfalls by procuring additional capital and money market loans.
- (c) The reimbursement period for the private sector loans was increased from 20 to 30 years (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 4: 5).

Van Niekerk, (2007: Interview) is of the opinion that the fact should be emphasised that in future new SANRAL toll roads should be in a superior position to procure loans from the capital and money markets due to the fact that SANRAL is now financially accredited, both locally and internationally.

The next section of this chapter is utilised to describe some relevant international public sector roads authority policies.

6.18 International public sector road authority policies

International public sector road authority policies that are comparable with the SANRAL toll road policy alternative is described in this section.

Various countries, including Australia and New Zealand, have adopted a policy of corporatising their national road agencies to make them more autonomous, improve performance and enhance market discipline. In Australia this has led to reorganisation of several state road agencies under a board of directors consisting of the heads of a variety of government departments. In the United States independent toll road authorities have been established for some time. The foremost advantage of these arrangements is that road authorities manage their financial accounts according to commercial principles. One of the most ambitious toll road systems is that of Japan. It is managed as a public company and operates approximately 4 700 km of toll roads. It utilises commercial accounting systems to fund its operations through tolls, bonds and long-term loans and receives modest support from the Government. In 1990 it earned 6% on its capital invested (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 4: 2).

The level of autonomy of toll road companies internationally varies very much. In most scenarios the company is a public enterprise and is controlled by the Government. The management of such a public company is generally drafted from the private sector. The powers and responsibilities of the public company are contained in the contract between the Government and the said public company. The most important factors that require government regulation and control are the toll tariffs and the creation of surpluses. The public company cannot be held liable if the Government keeps down tolls at irrationally low levels (as occurred in Mexico), ending in the financial collapse of the roads company. In countries with huge toll road networks high toll levies can be charged without diverting considerable volumes of traffic (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 3).

The history of toll financing in France could set an example for SANRAL.

6.18.1 France

Knowledge of the toll road policies implemented in France could provide SANRAL with policy relevant information.

After the Second World War the French road system was in need of reconstruction. In 1955 the Government approved legislation that allowed roads to be built by means of toll concessions. The first five road concessions between 1956 and 1969 were granted by the French Government to the public sector, with the participants being national public companies through which the toll roads were operated. The toll roads were funded from private sector loans guaranteed by the Government. Recent amendments to the initial financing arrangements have eradicated the government guarantees. The loans were redeemed over 35 years. The Government established the construction programme and technical specifications (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 8).

In 1969 the existing Act was changed to create completely private toll roads supported by banks and contractors. Four companies were created. Three of the four companies regrettably experienced funding difficulties and were taken over by the Government to form public-private companies. The large debt, which was created by the loans required to build the toll roads necessitated the reform of the funding and management of the public-private toll concessions. All nine public-private companies have been incorporated into a single public corporation in order to manage costs. The objective of this public organisation has been to warrant profitability of the toll road network. The Government has full authority over the adjustments and increases in road toll tariffs. Traffic growth is meeting predictions. On average approximately 85% of the traffic utilises the toll motorways, while the other 15% uses the alternative, free routes (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 9).

The toll road policies implemented in Italy indicate that Concession toll roads could be a financial risk for its shareholders.

6.18.2 Italy

In this section information is provided regarding the toll road policies implemented in Italy.

In 1924 the first toll road opened in Italy. A variety of sections has been included over the years resulting in a network of toll motorways. The most important development of the road network came in the 1960s and early 1970s. Toll roads in Italy are operated by 22 concession companies, all of which are predominantly owned by public organisations. Toll roads are administered by concession and the Government entrusts the assignment of financing, constructing and administering to an organisation for a given period (30 to 35 years). At the end of this period the entire toll road is returned to the Government free of charge. The concession companies achieve no financial profit. The Government is currently re-examining this policy for new toll roads (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 10).

The toll road network has been developed in such a manner that the more profitable sections of the network subsidise the less profitable. The State still guarantees the relevant loans. Approximately 90% of all road users and 10% of all heavy vehicles utilise the toll roads (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 10).

The United Kingdom also implemented toll road policies in the past.

6.18.3 United Kingdom

This section provides more information regarding the toll road policies implemented in the United Kingdom.

In the United Kingdom toll roads were abandoned in the 19th century but were again debated in the 1950s after the war. Toll roads were discarded on the basis that diversion to free roads would make them unfeasible. The Government did continue to toll large bridges and tunnels. Currently there are 11 toll bridges and tunnels. They have been funded by means of government loans and capital market loans obtained by the relevant local authorities (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 11).

The United States of America also has a history of applying toll road policies to provide for public roads.

6.18.4 The United States of America

The application of toll road policies by the United States of America is described in this section of the chapter.

The idea of funding roads by means of toll has long been utilised in the United States. After World War Two 19 States formed toll authorities. By 1954 some 2 200 km of toll roads were under construction and an added 5 300 km was being premeditated. This sudden increase of toll financing troubled the federal Government and in 1956 an Act was approved limiting the use of federal funds in the development of toll roads. The limitation that tolling had to come to an end once the loans were redeemed was also maintained. All 88 turnpikes are owned and operated by the Government as self-funding facilities (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 12).

In 1991 the Intermodal Surface Transportation Efficiency Act (ISTEA) was approved which requested that a National Highway System (NHS) be defined in detail. These are the important roads in the USA and are limited to 248 000 km. A component of the ISTEA legislation was the provision of Federal aid reimbursements to the Government for direct expenditures and loans for toll projects. These projects could be partnerships between the Government and other public and private entities (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa 1995: Chapter 5: 13).

The San Joaquin Hills Transportation Corridor is a toll road situated within California. The first part of a three-leg system was scheduled to open in 1995. The contract to design and construct the road project has been let and the winning bid was R2.73 billion. Approximately 90% of this cost will be financed from loans. This project is managed by the Transport Corridor Agencies, a public entity. Its responsibility is to manage the toll operator and to establish toll tariffs. The toll operator, however, is responsible to develop and operate the toll collection system for a period of five years. The toll income is paid over to the State. The Government keeps ownership of the road and is responsible for the maintenance of the road (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 14).

Japan also utilised toll road policies to provide for the required roads in that country.

6.18.5 Japan

This section describes how toll road policies were applied in Japan to provide for roads for use by the general public.

In Japan the development and building of toll roads are funded by private loans and borrowing from the Government. Government-borrowing comprises loans guaranteed by the Government on behalf of a variety of public funds. The toll authorities themselves raise private loans. Toll roads are built according to a superior standard compared to other roads and offer a higher level of service (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 18).

Based on the above, Van Niekerk, (2007: Interview) is of the opinion that the SANRAL toll road policy alternative is an internationally acceptable policy implemented in various countries. The principle of government guarantees for private loans, in order to enable the development and construction of toll roads, is also an international practice.

The Concession toll roads in Italy did not achieve any financial profit, whilst Smit, (2006: Interview) says that the purpose of a Concession toll road and the concession company is to produce a profit for the relevant investors. Smit, (2006: Interview) further says that the financial risk for investors could limit the usability of Concession toll roads in South Africa.

Essa, (2007: Interview) states that SANRAL toll roads are developed and provided to satisfy the needs of all South Africans and that profit making is not part of the SANRAL toll road policy concept. The fact that SANRAL toll roads are not profit-seeking schemes could make it a superior policy alternative in developing and providing a primary road network in South Africa.

The role of toll plaza operations and maintenance within the SANRAL toll road policy alternative is described in the following section.

6.19 Toll plaza operations and maintenance contracts

Contracts on the conventional SANRAL toll roads are granted to private sector companies for a period of three to five years after an open tender process. The contract implicates that the contractor is responsible for traffic management, vehicle classification, toll collection, toll collection control, the transfer of collected toll to an account of the toll project, maintenance of the toll plaza, lane area, buildings, toll equipment, emergency generator and equipment

and gardening and refuse services. At a number of plazas SOS telephone monitoring is needed. Of late the operations contract has been expanded to include roadside maintenance and minor repairs (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 8: 2)

The process of selecting an operator is not only based on the lowest tendered cost but also on past experience and excellence of service. The policy of renewing the contract after a limited period leads to doubt concerning employment and staff are generally anxious and demotivated as the contract period nears completion. If the contract was to increase to 10 years (with a clause permitting termination after three to five years) this could provide longer-term employment prospects for the operator's staff (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 8: 5).

The operation and maintenance of a SANRAL toll road is a continuous task related to that particular toll road. The advantage of toll financing is that guaranteed revenue is available to warrant that the road is adequately maintained over the lifetime of the project. The private sector companies emerge to be most effective and efficient to operate and maintain SANRAL toll roads (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 8: 8).

The SANRAL toll road maintenance includes grass cutting, clearing of drains and storm water channels, road marking and painting, fencing repairs, signage repairs and minor pavement repairs along the toll route. The standard arrangement of toll road operation and maintenance is performed in terms of a selected subcontract under the management of the contractor. There are, nevertheless, some SANRAL toll roads where either independent contractors appointed by the provincial administrators or working teams in employment of the province themselves perform these maintenance services (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 8: 4).

Van Niekerk, (2007: Interview) states that the SANRAL toll road policy alternative utilises the effectiveness and efficiency of private companies to operate and maintain toll plazas and even to maintain some SANRAL toll roads. SANRAL does obtain the necessary funding for the development and construction of the road, but could utilise capable companies to attend to the operation and maintenance of the road effectively and efficiently.

Financing sources for SANRAL toll roads are of great importance and are described in the following section of this chapter.

6.20 Financing sources

In South Africa there are well-established markets for the trading of financial assets. For easy reference they may be classified as the money market, primarily for the raising of short-term finance with duration of three years or less and the capital market, mainly for the raising of long-term funds with duration of longer than three years. The separation into money and capital markets should serve as a guideline only and is not supposed to be a rigid definition. A difference should also be made in the financial markets between the primary market, for new issues of funds, and the secondary market, which relates to the dealing in securities already issued. The primary and secondary markets pertain to both the money and the capital markets. The secondary market promotes the marketability and value of the securities due to the fact that an investor can willingly sell such instruments (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 1).

Essa, (2007: Interview) confirms that SANRAL has access to the money and capital markets, locally and internationally as it is financially accredited. SANRAL toll roads are generally developed and constructed with funding obtained from the money and capital markets.

Toll financing could be more costly when compared to the fuel levy in collecting the funds for road development, construction or maintenance (Essa, 2007).

6.21 Fuel levy versus toll financing

The fuel levy taxation versus the toll financing policies will be attended to in this section.

The expenditure on the collection of toll funds is costly when compared to the collection cost of other sources of revenue such as the fuel levy. The collection of toll revenue involves added costs in terms of capital, such as the construction of toll collection facilities and the provision of toll collection equipment, as well as the continuous cost of toll plaza operations. Steps have been taken to make sure that these costs are limited by requesting for competitive tenders from private contractors. It is acknowledged that there are cheaper means of collecting funds, but it is the most effective policy at present unless the Government amends its policy regarding dedicated funds and changes its policy on

spending for the road infrastructure (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 19: 2).

Debt-related methods are an important component of the SANRAL toll road policy alternative, as the development, construction and maintenance of the roads could be funded by means of short, medium and long-term finance.

6.22 Debt related methods

The debt-related methods are identified and described as follows:

Debt-related methods are divided between short, medium and long-term finance. Generally, short-term finance is for three years only, medium-term finance is applicable for periods between three and ten years and long-term finance for longer periods. A further categorisation of debt refers to the variability of the interest rate on the debt. A fixed interest rate implicates that the interest rate does not adjust for the period of the debt. A variable interest rate implies that the interest fluctuates in accordance with the market situation. Debt can also moreover be secured, so that in the occurrence of liquidation, the proceeds of the liquidated assets would first be used to fund the claim of the secured creditor. When unsecured, it would imply that the creditor does not have any preferential claim on the assets of the borrower. Bigger risk indicates a higher interest rate (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 1).

The debt methods commonly available in South Africa are described below:

Long-term debt as a method to obtain funds for road development is described in the following section.

6.22.1 Long-term debt

The long-term debt methods may include the following:

(a) Debentures

Debentures are medium or long-term loans in specific denominations, which are generally issued by private sector companies. They are usually issued at a fixed interest rate with a particular redemption date. The return on the different forms of debentures is affected by the

degree of risk borne by the debenture holder (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 2).

(b) Stock

Stock issues are utilised to cover the medium and long-term needs of capital projects. Redemption periods may fluctuate between three and 20 years with bi-annual interest instalments (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 2).

(c) Loans

Loans implicate the lending of money by one party to another with a prearranged redemption date. The terms of the loan take into consideration the needs and preferences of both parties. The terms of issue relate mainly to the security: the loan can be secured or unsecured, and the interest: the loan may have a fixed or a variable interest rate (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 3).

Short-term debt is another method that could be utilised by applying the SANRAL toll road policy alternative.

6.22.2 Short-term debt

Short-term debt is explained in this section and examples thereof are provided.

Short-term funds are generally raised in accordance with the capital needs of the borrower. Short-term debt is regularly utilised as a form of bridging funding to increase the borrower's financial capacity (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 3).

The general sources of short-term finance are mentioned below:

(a) Bank overdraft

Making use of bank overdrafts is a method utilised to enable payments beyond the amount of funds in the bank account (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 3).

(b) Call facility

Call facilities are overnight facilities that are typically rolled over on a day-to-day basis to fulfil the borrower's ultra short-term requirements (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 3).

(c) Banker's acceptances

A banker's acceptance is produced when a company sells a bill of exchange to the bank to be redeemed on a prearranged date, generally 90 days later (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 3).

(d) Capital project bills

Capital project bills are short-term debt instruments issued to fund particular projects in the public sector until alternative funding can be arranged. They have a maturity of 90 days (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 4).

(e) Bridging bonds

Bridging bonds are issued by public sector organisations, for example, local authorities, water boards and public corporations. They are generally utilised as bridging finance to make provision for short-term funding requirements until alternative funding can be obtained. The redemption date is between six and 12 months (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 4).

(f) Foreign loans

A South African borrower can arrange term finance on the euro-market, generally through banks (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 16, Annexure B: 4).

Smit, (2006: Interview) is of the opinion that it is not possible to analyse the SANRAL toll road policy alternative without taking cognisance of the debt-related methods available in the capital and money markets. It is important to realise that the SANRAL toll road policy

alternative may also be seen as a mechanism for providing the required funding for different toll road projects.

Essa, (2007: Interview) says that the most important information regarding debt-related methods could be the fact that SANRAL toll roads may be funded by means of short, medium and long-term finance, locally or internationally.

The anticipated results of the SANRAL toll road policy alternative on South Africa are relevant to this study.

6.23 Anticipated results of the SANRAL toll road policy alternative

The anticipated results of the SANRAL toll road policy alternative could be of importance in selecting a policy to develop and maintain national roads in South Africa.

The Department of Transport anticipated in its report (A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17) that SANRAL toll roads could have the following impact on South Africa:

The SANRAL toll road policy alternative may have a positive effect on personal tax burdens.

6.23.1 Impact on tax burdens

The anticipated impact of the SANRAL toll road policy alternative on tax burdens is described below.

Since roads are funded by means of general revenues, rather than any dedicated part of them, the impact of a decrease in road expenditures could in practice be extended across the total revenue base. In comparison to South Africa's total tax collection in 1989/90 of approximately R65 billion, the sum of savings that could be attained through the establishment of SANRAL toll roads is of no consequence. In macro-economic terms the impact on tax burdens may be small. Nonetheless, it could be said that these savings may be a replacement for an exacting revenue source, for example, the personal income tax. A decrease of R400 million per annum in personal income tax, if applied proportionately across all taxpayers, could allow average tax rates to be lowered by approximately one or two percent. This may represent a useful contribution to the Government's stated goal of decreasing personal income tax burdens (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 21).

The possible impact of SANRAL toll roads on regional development is described in the following section.

6.23.2 Impact on regional development

The anticipated impact of SANRAL toll roads on regional development is described in this section.

South Africa has dedicated a significant amount of effort and funds to regional development and much of it was directed towards the encouragement of industrial decentralisation. Policies in this regard have been reconsidered and indications are that in future they will take on a less regulated character, with the location of firms being based more on the relative economic benefits of different geographic areas. The intention of new government policies are directed to counter urban bias, that is, the tendency for public spending on infrastructure to be focused on urban areas to such a level that these areas are in fact subsidised from the general tax base. The supply of roads as free goods is said to be a major example of urban bias, due to the fact that the bulk of benefits accruing from freely available road services are enjoyed in close proximity to urban areas (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 22).

Since most SANRAL toll road plazas will be situated in the urban areas where there are more traffic volumes, it could be stated that the envisaged SANRAL toll roads may have a constructive bearing on regional development objectives by decreasing urban bias (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 23).

The possible impact of SANRAL toll roads on the distribution of income is also worth describing.

6.23.3 Impact on income distribution

The anticipated impact of SANRAL toll roads on the distribution of income is described below.

It seems that a change in the source of road expenditure from general tax revenues to tolls should necessarily be regressive, by being equivalent in many respects to a shift from direct to indirect taxation. This fact should be emphasised if tolls are justified as being essential to enable income tax reductions. It should be noted that any such regressivity could be

ameliorated considerably by tolling mostly high serviceability national roads, and providing concessions to commuters should lessen it further. With regard to revenues, income tax forms a modest part of the complete tax basis out of which roads are funded and a large share of the residual portion is made up of regressive indirect taxes. In addition, on the expenditure side of the equation, the progressive nature of vehicle ownership and use, and the high vehicle occupancy rates of the low income groups, propose that the advantages of free roads accrue greatly to the wealthier classes (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 22).

It is rational to imply that the cost of SANRAL toll roads will impact more on wealthy groups for the reason that they have greater vehicle ownership and use. Thus the real impact is likely to be an increase in indirect tax (toll charges) for higher income groups, and a decrease in direct taxes for lower income groups. The net impact of SANRAL toll roads on income distribution is expected to be minimal and pragmatically neutral (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 22).

The anticipated impact of SANRAL toll roads on inflation is another factor or benefit to consider.

6.23.4 Impact on inflation

The possible impact of SANRAL toll roads on inflation is described in this section.

A minor inflationary effect may result from increased investment spending, but exploiting other forms of investment could counterbalance this. The cost-increasing effects of tolls on consumer goods should be less than the cost-lowering benefits that high serviceability toll roads present to commercial vehicles utilising them. A net deflationary impact could therefore be expected if, as may well be the case in the current climate of inflationary prospects, costs are more regularly shifted forward onto consumers, than are benefits, then this situation could in fact be neutralised or overturned. The net effect is still expected to be small (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 24).

A certain amount of inflationary impact is likely from the reduction of taxes, but whether or not this would occur, would depend on overall fiscal management. In conclusion, a minor impact on costs could be expected, but any effect would be a once-off occurrence and would

not contribute to inflation as such (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 24).

For the purposes of this dissertation it could be of importance to analyse the possible impact of SANRAL toll roads on the economy of South Africa.

6.23.5 The overall impact of SANRAL toll roads on the economy

The anticipated impact of SANRAL toll roads on the economy of South Africa is described in this section of the chapter.

It may be possible to give a holistic impression of the effect that the proposed SANRAL toll road network would probably have on the South African economy. This indicates that a long-term saving of R400 million per annum in required revenue would correspond with the total effect of the toll road strategy. The provision of sufficient roads, particularly those of the high serviceability type, out of the general revenues, is not likely to be possible in the foreseeable future. In practical terms, the alternative to the implementation of a SANRAL toll road network is probably a steady degradation of the road system and especially an incapability to provide high serviceability roads (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 25).

Given the criteria for construction of high serviceability roads, these roads must by definition grant positive net benefits to their users. The failure to afford such benefits may have understated, but far-reaching economic disadvantages. Current views regarding the overcapacity on certain primary road networks are in part due to the slow economic growth. The continuation of rising government expenditures on services at the expense of capital investment will unavoidably be negative for future economic growth. The unavailability of finance for road provision will probably also have detrimental consequences for future income distribution and the economic expansion of backward communities, by restraining opportunities for partaking in the formal economy (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 26).

SANRAL toll roads could enable these constraints to be conquered, and may be seen as potentially advantageous to the South African economy in the long term. This advantage may be enhanced if cautious thought is given to the appropriate use of the profits that are made from tolling of existing roads. The provision of SANRAL Toll Roads may have wide-ranging benefits for the whole society (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 26).

The other benefit of SANRAL toll roads lies in its extension of the principle of user-charging for publicly provided services in South Africa. Demands for a large collection of social services, which may only be realised effectively through government intervention, could continue to increase for many years to come in South Africa (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 17: 26).

The literature survey indicates that SANRAL toll roads may have a possible positive effect on tax burdens, the regional development of South Africa, income distribution and inflation, and could also benefit the overall economy of South Africa.

Van Niekerk, (2007: Interview) is of the opinion that practical experience has indicated that SANRAL toll roads could assist SANRAL in achieving its goal of serving the basic needs of the people of South Africa. SANRAL toll roads could make certain regions more accessible for commercial business and it is probable that SANRAL toll roads have enhanced the development of regions, for example the Limpopo and Free State provinces. SANRAL toll roads may also promote the basic need of South African citizens to be transported quickly and more safely from home to work on a daily basis.

The economic acceptance of SANRAL toll roads is an important objective of SANRAL.

6.24 Economic acceptance of SANRAL toll roads

The following are the most important economic arguments regarding SANRAL toll roads:

- (a) Toll funding necessitates a market-related discipline on the building of roads and thus warrants that only roads that are in fact required as a priority are constructed.
- (b) Toll funding is in correlation with government policy on user-charging. Instead of charging an indirect general tax, the cost of the building of the road is recovered from those who use it.
- (c) The implementation of the user-charging policy results in an impartial approach to road development and maintenance as the road user pays for the road. The tax base is broadened and the tax base will move from direct to indirect taxation.
- (d) In limiting the overall government expenditure on roads, SANRAL toll roads could ultimately add to a lowering of the income tax rate. This argument has substantial support in the economic sphere and should therefore be emphasised.

- (e) SANRAL toll roads are being tolled with minimal cross-subsidisation, as they are to a great extent self-financing.
- (f) Primary roads are being prioritised to permit for their construction, so that the road could fulfil its important infrastructural function.
- (g) SANRAL toll roads serve the collective good by aiding in the provision of a high standard national road network.
- (h) SANRAL toll roads are not developed and maintained with a profit motive and the public interest is protected by road user and private sector participation (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 18: 6).

Van Niekerk, (2007: Interview) states that the greatest economic advantage of SANRAL Toll Roads could be the anticipated economic growth in the isolated regions within South Africa.

There are also political arguments regarding the advantages of SANRAL toll roads.

6.25 Political acceptance of SANRAL toll roads

In addition to the above advantages of SANRAL toll roads, particular attention should also be given to the following aspects:

- (a) Toll funding is the only policy in which a well-maintained functional primary national road network can be provided to the public.
- (b) SANRAL toll roads normally provide a considerable saving in time and transport costs if compared with the alternative routes.
- (c) SANRAL toll roads represent a substantial investment of public funds. A toll policy presents the mechanism to protect these investments due to the fact that sufficient funds are always available for maintenance.
- (d) The levy on the sale of fuel is no longer allocated to the SANRAL Portfolio Fund, but utilised general government expenditure.

- (e) The tolling of existing roads is individually submitted to the Minister of Transport for approval, thereby removing the possibility of politically imprudent decisions being taken (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 18: 7).

Smit, (2006: Interview) says that the objective with SANRAL toll roads may be to develop and provide a primary national road network in South Africa and in doing so SANRAL could serve the basic needs of the public of South Africa.

SANRAL is of the opinion that by tolling existing and new national roads could create a self-financing primary road network in the future.

6.26 Tolling existing and new freeways may create a self-financing primary road network

The SANRAL toll road policy alternative may assist in creating a self-financing primary national road network in South Africa.

Tolling the current freeway system of South Africa could provide enough nett toll income to meet long-term loan commitments to enable spending of R500 – R700 million per annum on the upgrading and maintenance of existing national roads and the construction of new national roads. Of the R500 - R700 million, between R250 and R300 million per annum could be applied on the upgrading or maintenance of existing roads and between R300 and R400 million on the development of new national roads. It may be stated that, if the current freeway system of South Africa is tolled, enough net toll income could be available to maintain and, where necessary, rehabilitate the national road network and to fund various new freeway projects that are economically feasible. It is predicted that SANRAL toll roads may provide the necessary funds to finance the development and maintenance of the national road network effectively and efficiently (Department of Transport: A Review of the Toll Road Policy for the Republic of South Africa, 1991: Chapter 19: 6).

Van Niekerk, (2007: Interview) is of the opinion that due to low car volumes on certain sections of national roads it would not be possible to toll all existing and new national roads, which may explain the necessity of utilising Non-toll national roads where applicable. The transformation of Non-toll national roads into SANRAL toll roads, where appropriate, could, enhance the development and provision of the required primary national road network in South Africa.

The Toll Road Investigations Co-ordinating Committee made some recommendations regarding SANRAL toll roads and is described in the following section of this chapter.

6.27 The Toll Road Investigations Co-ordinating Committee

The Toll Road Investigations Co-ordinating Committee was established in 1980, under the chairmanship of the Department of Transport, to co-ordinate and investigate the toll road policy for national roads. They concluded and recommended that:

- (a) Economic, social and political matters limit the level of spending on national roads. There is also a boundary on the overall level of taxation and that user-charging should be utilised to finance government services. It is a principle of the South African economic policy to restrain government spending and to stimulate the private sector. In view of this policy and the bigger demand for government funds for the provision of social and other services to the less privileged sections of society, it is realistic to expect that the allocation of funds for national roads will decrease and therefore other sources of revenue should be used for investment in national roads (Department of Transport: Principles and Policies for Possible Toll Financing of Roads in South Africa, 1981: Chapter 11: 129).
- (b) It is also government policy to encourage self-financing of government services and user-charging. Toll financing of national roads is in compliance with this policy. A feature of user-charging is that the level of expenditure is determined by the income. Toll financing is only looked upon as a viable policy for financing high standard facilities or high cost facilities such as national roads, tunnels and bridges. SANRAL toll roads do not present a complete solution to the financing of national roads, given that lower quality roads have to be funded by other means and may therefore be considered as an additional source of revenue (Department of Transport: Principles and Policies for Possible Toll Financing of Roads in South Africa, 1981: Chapter 11: 129).
- (c) Toll financing, as a sole source of revenue for the financing of all national roads, is not advised, because of the high cost of collection in comparison with the costs of collection of other common sources of revenue. If tolls are utilised in amalgamation with loans, they do, however, offer a benefit, since tolls are a noticeable form of income directly attached to the facility for which the loan was attained. The management of a toll facility and policy of raising funds can be evaluated by investors

if loan repayment problems were to occur (Department of Transport: Principles and Policies for Possible Toll Financing of Roads in South Africa, 1981: Chapter 11: 130).

- (d) Loan funding of national roads is generally advantageous, because more benefits can be provided at an earlier stage and part of the burden of providing the service can be transferred to future use. It should be kept in mind, though, that there are funding costs involved (Department of Transport: Principles and Policies for Possible Toll Financing of Roads in South Africa, 1981: Chapter 11: 130).
- (e) The development, design and maintenance standards of toll roads are generally very high (Department of Transport: Principles and Policies for Possible Toll Financing of Roads in South Africa, 1981: Chapter 11: 132).

The Toll Road Investigations Co-ordinating Committee came to the conclusion that available government finance for national roads is limited due to the Government's financial commitment to other economic, social and political issues. The Government is further in favour of self-financing in providing services to the public. The committee is of the opinion that toll financing of some national roads is a viable policy for financing high standard and high cost national roads. The committee also concluded that the utilisation of tolls in amalgamation with loans could be advantageous, especially if the income is directly attached to a specific facility.

SANRAL toll roads could limit the financial pressure on the National Treasury; to finance other important economic and social matter as SANRAL toll roads to a great extent could be self-financing. SANRAL toll roads utilise tolls in amalgamation with loans (local or international loans) to fund the development and maintenance of the primary national road network.

The current situation or status of SANRAL toll roads is also relevant to this dissertation.

6.28 The current situation regarding SANRAL toll roads

The current situation in respect of SANRAL toll roads is described in this section of the dissertation.

Van Niekerk, (2006: Interview) says that SANRAL toll roads are still being developed and maintained at present. National Route 17 (N17) is an example hereof. SANRAL got the necessary funds (loans and bonds) through the support of the Government. As with Non-toll

roads the planning and development of the road is done beforehand, and thereafter the construction of the road also goes out on tender. The Government guarantees the payment of the debt. SANRAL toll roads therefore are a liability to the Government. At this stage the Government is willing to provide guarantees for the payment of bonds and loans for the maximum amount of R6 billion. This R6 billion guarantee is applicable to all the SANRAL toll roads in South Africa, and not to individual national roads or projects. Unfortunately this revenue is not sufficient for the development and maintenance of an effective national road network in South Africa. Fortunately SANRAL's credit rating is good, which enables them to apply for bonds and loans on the capital and money markets. These additional funds could be utilised when the R6 billion guarantee of the Government is not adequate to meet the needs for the further development and maintenance of the national road network.

It is possible that in future various SANRAL toll roads could be funded by means of bonds and loans obtained by SANRAL itself. If the Government continues to give guarantees for the development, operation and maintenance of SANRAL toll roads, it could reflect negatively on the financial and credit rating of South Africa, as it is viewed as a financial responsibility and therefore a liability against the Government. It is important to protect the credit and financial rating of the Republic of South Africa. This is a reason for the Government limiting its SANRAL toll roads guarantees to the amount of R6 billion (Van Niekerk: 2006: Interview).

SANRAL, with the endorsement of the Ministers of Transport and Finance, benefits from the support of a government guarantee for the loans raised from the capital and money markets. This guarantee has been in effect since the early 1980s and has been sensibly utilised to develop and maintain the SANRAL toll roads. The guarantee is perpetuated with a limit of R6 billion. To develop an effective and efficient national road network might require R30 billion, therefore the present R6 billion government guarantee is insufficient for the development and maintenance of the required SANRAL toll road portfolio (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 16).

The user-pay policy assists the early implementation of a SANRAL toll road facility financed through private sector funding on commercial grounds, not only in the initial construction of the road, but for the continued maintenance, which normally exceeds the initial construction cost over the life-span of the SANRAL toll road. The user-pay policy is now well established and the income received is used to enhance the road infrastructure, to service debt on the toll network and to guarantee a well maintained SANRAL toll road network for the road user (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

SANRAL in terms of Section 33(2)(a) of *the South African National Roads Agency Limited and National Roads Acts, 1998 (Act 7 of 1998)* is entitled to raise funds by means of loans from any source including the money and capital markets at any time provided that the consent of the Ministers of Transport and Finance has been obtained. SANRAL has obtained medium and long-term bonds secured by a government guarantee in the capital market. The funds raised are utilised for the initial construction of the SANRAL toll road and its continued maintenance. All SANRAL toll road projects implemented through this policy are structured to ensure that all private sector loans plus interest are repaid within a 30-year period (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

SANRAL toll roads are being operated and maintained by private sector companies in accordance with prescribed performance criteria and are called Comprehensive Toll Road Operations and Maintenance (CTROM). In terms of the CTROM contracts, the private sector companies are taking responsibility for the operation and maintenance of the SANRAL toll roads and receive compensation in accordance with the publicly tendered fee. CTROM contracts are now well established in South Africa, with the result that SANRAL toll road maintenance and operation are executed at a good standard (The South African National Roads Agency Limited: Annual Report, 2005: 23).

Essa, (2007: Interview) is of the opinion that currently the most important aspect regarding SANRAL toll roads is that SANRAL is now capable of borrowing finance from the local and international capital and money markets to fund the development and maintenance of SANRAL toll roads. This policy alternative may enhance the establishment of the required primary national road network effectively and efficiently.

The following section of this chapter is utilised to describe the expenditure on and the borrowing needs of the SANRAL toll road portfolio.

6.28.1 Expenditure on SANRAL toll roads and the borrowing needs

The required expenditure on SANRAL toll roads for the 2004/2005 financial year was R360 931 000 and is summarised in the tables below:

Table 6/1: Operational expenditure for the 2004/2005 financial year

SANRAL toll roads – operational expenditure			
Description	Number of projects	Length (km)	Cost R'000
Periodic maintenance	15	590	110 855
Toll operations and routine maintenance	16	1 173	193 641
Total	33	3 160	304 496

Table 6/2: Capital expenditure for the 2004/2005 financial year

SANRAL toll roads – capital expenditure			
Descriptions	Number of Projects	Length (km)	Cost R'000
Strengthening	1	46	2 478
Improvements	7	154	42 188
New Facilities	3	13	11 769
Total	14	213	56 435

Source: adapted from the South African National Roads Agency Limited: Annual Report, 2005: 23

SANRAL proposes to extend its national primary road network to approximately 20 000 km and utilise various financial policies to accomplish this. The existing SANRAL toll roads still need to be maintained and developed due to the consistent traffic growth. In addition, the debt on these roads has to be serviced in the light of rising costs. To date, sources of funding included money markets, primary loans, structured finance and secondary markets. In order to manage the existing SANRAL toll road network, the net borrowing needs for the next five years are projected as:

Table 6/3: Net-borrowing requirements for the existing SANRAL toll road portfolio

Financial year	2005/06	2006/07	2007/08	2008/09	2009/10
Net borrowing requirement (R'000)	971 000	794 000	113 000	12 000	184 000

Source: adapted from the South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 26.

Should one road project be added to the existing SANRAL toll road portfolio, for example, the Gauteng Network Scheme, this may have a significant impact on the SANRAL toll road borrowing needs. This indicates the lively environment of SANRAL's business and the need

to proactively manage its financial affairs (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 27).

The current SANRAL toll road programme, which is part of SANRAL's strategic vision as depicted in the Horizon Twenty Ten document, comprises the following:

Table 6/4: New SANRAL toll road projects

Planned SANRAL toll projects (2005-2012)	
Initial capital works expenditure (2004 Rand)	
N1 Huguenot tunnel- second bore	R 550m
N1 South and R30 Welkom to Bloemfontein (196 km)	R 444m
N2 Tsitsikamma extension (14km)	R 199m
N3 Pietermaritzburg to Durban (Marianhill toll road) (85km)	R 881m
N17 east toll road extension (180km)	R 629m
Gauteng network (340km)	R 4 565m
N2 Knysna toll highway (23km)	R 519m
Various bridges	R 900m
Total	R 8 687m

Source: adapted from the South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 27.

Van Niekerk, (2007: Interview) says that due to the astronomical rise in the prices of materials utilised to construct and maintain national roads, it is envisaged that to develop and maintain a primary national road network in South Africa, will cost approximately R30 billion. Early calculations indicate that the primary road network planned for the Gauteng Province could cost approximately R22 billion due to the rising cost of the relevant construction material. The SANRAL toll road policy alternative would be used in establishing the primary road network in Gauteng as the financial risks for investors in Concession toll roads are too extreme, due to the availability of alternative routes and the possible impact of the Gautrain on the behaviour patterns of the road users. The importance of SANRAL toll roads in the provision of the required primary national road network in South Africa should therefore not be underestimated.

Table 6/5: Required funding for new SANRAL toll roads

Financial year	2005/06	2006/07	2007/08	2008/09	2009/10
N1 Huguenot tunnel – second bore	-	-	-	253	255
R30 Welkom to Bloemfontein	-	150	295	345	100
N2 Tsitsikamma extension	-	100	100	-	-
N2 Knysna bypass	-	-	50	207	158
N3 Pietermaritzburg to Durban	-	-	120	300	312
N17 east extension	-	219	433	104	-
N2 Wild Coast bridges	-	75	310	310	236
N1 Gauteng province network	-	852	1,029	1,029	1,029
Magalies toll road extension	-	131	151	148	17
Total borrowings (R millions)	-	1,526	2,489	2,696	2,107
Total cumulative borrowings (R1 millions)	-	1,526	4,015	6,712	8,819

Source: adapted from the South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 28.

Table 6/5 indicates that SANRAL needs to raise an estimated R 8 819 million over the next five financial years.

The SANRAL toll road policy alternative may have general advantages for the public, the Government and SANRAL itself.

6.28.2 The general benefits of SANRAL toll roads

The general benefits of SANRAL toll roads may be the following:

- (a) Road users generally have the choice of utilising the SANRAL toll road or an alternative tax-supported route. In exchange for payment, the customer receives value in the form of savings, convenience, better quality and maintained roads and a saving in vehicle operating costs. The result is less congestion for all drivers and better mobility and economic growth.
- (b) Road users are not taxed twice to use a SANRAL toll road. Instead, they are provided with new road capacity and are able to reduce the losses of time and economic productivity. SANRAL toll roads are financed by those opting to pay for the use of the road, whereas taxes are not optional and are charged to everyone.

- (c) Transport finance is usually important for developing areas and areas that require improvements. Typically, the demand for roads far outpaces conventional policy options, for example Non-toll roads. Consequently, the SANRAL toll road policy alternative serves as a complement to traditional funding policies and releases fiscus funds for Non-toll roads.
- (d) SANRAL toll roads promote quicker project implementation, which has widespread economic benefits. Transportation capacity is available to the road user many years sooner than would otherwise be possible.
- (e) The SANRAL toll road policy alternative provides an allocated revenue availability to finance continuous operations and maintenance.
- (f) The SANRAL toll road policy alternative promotes the attractiveness of road based-public transport system, because of lower vehicle operating costs and possibly reduced toll fees and travel time (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 29).

Essa, (2007: Interview) confirms the above-mentioned advantages of SANRAL toll roads, as they are generally better quality roads that are maintained to prescribed standards determined by SANRAL. There is usually less congestion on SANRAL toll roads due to the capacity of these roads to handle larger volumes of cars. Experience indicates that road users spend less time on the road and that in itself benefits productivity and road user convenience. The SANRAL toll road policy alternative also implies that the National Treasury can provide more funds for the development and maintenance of Non-toll roads. The SANRAL toll roads are also better maintained due to the availability of the necessary funds. SANRAL toll road levies may also be lower in comparison with Concession toll roads, because no profit need is involved. It is also anticipated that a SANRAL toll road network could be the solution in solving the congestion problem on the roads of Gauteng.

SANRAL's financial credit ratings, locally and internationally, could be seen as the most vital element within the SANRAL toll road policy alternative.

6.28.3 SANRAL credit ratings

The SANRAL financial credit ratings, locally and internationally are described in this section of the chapter.

It is an objective of SANRAL to decrease its dependence on the government guarantee and to better utilise the current facility of R6 billion. To this effect, the recently acquired credit rating by an independent rating agency, of zaAA long-term and zaA1 + short-term, provide an opportunity to search for non-guarantee debt instruments. The latter can be an array of securitisation, medium-term note programmes and bonds. SANRAL will continue to investigate other innovative funding policies (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

Smit, (2006: Interview) says that SANRAL is in the process of obtaining an independent credit rating for access to the international capital and money markets. It is assumed that this credit rating will enable SANRAL to obtain loans and bonds from the international money and capital markets without utilising the government guarantee. This is an important fact, as it will enable SANRAL to obtain additional funds from the international capital markets to be used for the development and maintenance of the SANRAL toll road portfolio without the support of the government guarantee, which is line with current government policy.

Essa, (2007: Interview) says that SANRAL has obtained financial credit ratings from an independent agency regarding access to the local and international capital and money markets. The following accreditations were awarded to SANRAL: zaAA long-term and zaA1+ short-term for the local market, and Aa2.za long-term and P-1.za short-term with stable outlook for the international capital and money markets. This development will enable SANRAL to acquire loans and bonds from the international markets without utilising the government guarantee. The fact that SANRAL can now obtain funding itself for the development and maintenance of national roads together with the availability of the government guarantee are the most important components of the SANRAL toll road policy alternative.

The next section of this dissertation is dedicated to the analysis of the SANRAL toll road policy alternative in terms of the selected primary criteria.

6.29 Analysing the SANRAL toll road policy alternative in terms of the selected primary criteria

The SANRAL toll road policy alternative is analysed in terms of the selected primary criteria in this section of the dissertation.

Walker, (1994: 2) writes that the policy analysis process indicates that each policy alternative should be analysed in terms of the selected criteria. The Non-toll road policy alternative is

analysed in a previous chapter, and this section of the chapter is dedicated to the analysis of the SANRAL toll road policy alternative in terms of the selected criteria, which was agreed upon between the researcher and some experts related to SANRAL.

In the following section of this chapter the SANRAL toll road policy alternative is analysed in terms of its capability to provide and promote a primary national road network in South Africa.

6.29.1 The capability of SANRAL toll roads to provide and promote a primary national road network in South Africa

The aim with this section of this chapter is to indicate that the current SANRAL toll roads are currently functioning effectively and efficiently.

Peterson, (2007: Interview) is of the opinion that the following SANRAL toll roads and tunnels are currently functioning effectively and efficiently:

- (a) The Huguenot tunnel on National Route 1 South.
- (b) The Tsitsikamma SANRAL toll road on National Route 2.
- (c) National Route 3 between Pietermaritzburg and Durban.
- (d) The SANRAL toll road on National Route 2 in the vicinity of Knysna.
- (e) Various bridges developed and maintained in terms of the SANRAL toll road policy alternative.
- (f) The SANRAL toll road on National Route 2 (the South Coast toll road).
- (g) National Route 2 (the SANRAL toll road on the north coast of Kwazulu-Natal).
- (h) The SANRAL toll road between Welkom and Bloemfontein.

Van Niekerk, (2007: Interview) is of the opinion that the SANRAL toll road between Polokwane and Beitbrug is also functioning effectively and efficiently.

Smit, (2006: Interview) says that the proposed toll road network for Gauteng should be developed and maintained as SANRAL toll roads, as the financial risk element for investors in a Concession toll road company may not be acceptable due to the availability of alternative routes and the possible impact of the Gautrain on road use demand. The investors in a Concession toll road company are motivated by a profit motive and if the financial risk is deemed to be too high, Concession toll roads are not seen as being a realistic investment.

Essa, (2007: Interview) is of the opinion that SANRAL is an established public company, whilst concession companies still require to set up offices and other facilities in order to attend to the planning, development and maintenance of Concession toll roads. This implies that funds need to be acquired to establish the infrastructure before business could even commence. SANRAL has existing offices in all the relevant regions, which could save costs. The concession company is required to take into account the costs of setting up the necessary infrastructure, as this could have an effect on the profitability of the concession company and the concession toll road. These additional costs of setting up the required offices and infrastructure may have an effect on the toll levy payable at the toll plazas.

SANRAL as a non-profitable public company does not need to pay tax, as it is not supposed to show a profit at the end of each financial year. This may indicate that the toll levies accumulated at the various SANRAL toll road plazas could be lower in comparison with Concession toll road plazas, as the motive with a Concession toll road is to produce a pre-determined profit on the financial input provided by the investors in the concession company (Essa, 2007: Interview).

Essa, (2007: Interview) further says that past experience showed that SANRAL might negotiate lower interest on outstanding loans, as history has proven that public companies may negotiate lower interest rates on outstanding loans, due to the financial security provided by governments. Concession companies generally don't have the financial security provided by governments. This could indicate that the concession company has to pay higher interest rates in redeeming the relevant loans required to finance the Concession toll road project. This may also have an effect on the levy charge for utilising such a road.

SANRAL (as a public entity) should be capable to attain the required capital and money market loans at lower interest rates as concession companies, finance for private companies are also available, though through a higher price (Smit & Jamieson, 1995: 26).

Essa, (2007: Interview) is further of the opinion that the total cost of a SANRAL toll road could be at least 2% cheaper than a Concession toll road over the life cycle of the projects.

Van Niekerk, (2007: Interview) says that the opinion exists that Concession toll roads are developed and constructed at a faster rate than SANRAL toll roads. The proposed Wild Coast toll road in the Transkei has proven that this theory is not always correct. It took the developer of the Concession toll road many years to obtain an environmental impact assessment approval. Van Niekerk, (2006) is of the opinion that if SANRAL as a public company had applied for the same environmental assessment approval, the process of

receiving such an approval may have been faster, due to the involvement of the Government in projects that could enhance the development of underprivileged communities. SANRAL generally utilises a tender process to enable the construction and maintenance of SANRAL toll roads and the relevant toll plazas. There is no rational reason why the SANRAL contractors could not construct and maintain the relevant facilities as quickly and on the same standard as the contractors utilised by a concession company.

Concession toll roads are developed with the emphasis being on time and cost. This could lead to construction taking place within unreasonable timetables, which can affect the quality of the Concession toll road. It is therefore possible that SANRAL toll roads may in some instances be of a superior standard (Van Niekerk, 2007: Interview).

Van Niekerk, (2007: Interview) states that the development and construction costs relating to Concession toll roads could be higher in comparison with SANRAL toll roads, which may result in higher user-charging at toll gates. This could be due to the higher interest rate the concession company has to pay to redeem the necessary loans.

The SANRAL toll road policy alternative has greater potential in providing the required primary national road network in South Africa, as the highly profitable and risk-free portions of the national road network are very limited or already utilised for Concession toll roads. National Route 3 (N3) and National Route 4 (N4) are examples of national roads with a potential adequate return on investment. National Route 17 (N17) and the proposed Gauteng national road network indicate the reluctance of concession road investors to invest in toll roads where the financial risks are seen as being too high (Van Niekerk, 2007: Interview).

Van Niekerk, (2007: Interview) and Peterson, (2007: Interview) are of the opinion that past experiences have already proven that the SANRAL toll road policy alternative had enhanced the development and maintenance of the required primary national road network in South Africa and could continue to do so.

The relation between financial risks and the SANRAL toll road policy alternative is described in the following section of this chapter.

6.29.2 Financial risks and the SANRAL toll road policy alternative

This section is dedicated to the relationship between financial risks and the SANRAL toll road policy alternative.

Van Niekerk, (2007: Interview) says that the financial risk factor for investors in Concession toll roads is the most important reason why Concession toll roads may have a limited impact in creating the primary national road network in South Africa. Investors are in business to enhance their financial position and would not undertake a road project that could result in great financial losses. If the toll road project cannot ensure a good return on investment, Concession toll roads may not be a viable option as there are other opportunities available in the capital and money markets to ensure an acceptable profit. SANRAL has the responsibility to provide roads that could serve the basic needs of the people of South Africa. SANRAL toll roads are not developed to make any profits and are therefore more appropriate in providing good national roads in the less congested areas or regions of economical importance. If the financial risk of National Route 17 (N17) and the proposed Gauteng toll road project were considerable lower, than Concession toll roads may have been an option. The availability of alternative routes could be identified as a financial risk during feasibility studies. SANRAL, with the use of the government guarantee and the possible availability of finance in the Portfolio Fund, may be able to develop and construct SANRAL toll roads, which private companies may see as too much of a financial risk.

The borrowing capacity of SANRAL relating to the SANRAL toll road policy alternative is of great importance to this dissertation

6.29.3 The borrowing capacity of SANRAL

The borrowing capacity of SANRAL could be seen as an important factor within this analysis.

It is a financial objective of SANRAL to decrease its dependence on the government guarantee and to better utilise the current facility of R6 billion. SANRAL recently obtained a credit rating zaAA long-term and zaA1 + short-term and provided an opportunity to investigate non-guarantee financial policies (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

Smit, (2006: Interview) says that SANRAL is in the process of obtaining an independent credit rating for access to the international capital and money markets. It is assumed that this credit rating will enable SANRAL to obtain loans and bonds from the international money and capital markets without utilising the government guarantee. This is an important fact, as it will enable SANRAL to obtain additional funds from the international capital markets to be used for the development and maintenance of the SANRAL toll road portfolio without the support of the government guarantee, which is line with current government policy.

Essa, (2007: Interview) has confirmed that SANRAL has obtained financial credit ratings from an independent agency regarding access to the local and international capital and money markets. The following accreditations were awarded to SANRAL: zaAA long-term and zaA1+ short-term for the local market, and Aa2.za long-term and P-1.za short-term with stable outlook for the international capital and money markets. This is a progressive step in the development and maintenance of a primary national road network for South Africa. SANRAL is now in a position to negotiate loans, for national road development and maintenance from the local and international capital and money markets. This implies that finance for the SANRAL toll road portfolio is now obtainable from the international markets without utilising the government guarantee of R6 billion, which seems to be insufficient to guarantee the funding needs required for the primary national road network. SANRAL itself is now able to raise funds from the local and international market to finance the SANRAL toll road network required to serve the transport needs of the South African public. In practical terms SANRAL may now provide toll roads that cannot be constructed by means of the Concession toll road alternative. This new financial freedom of SANRAL may allow the building of high quality SANRAL toll roads which were previously impossible, or otherwise considered not viable to construct. SANRAL (as a public entity) should be capable to obtain funds from the capital and money markets at superior interest rates in comparison with private companies, due to the fact that SANRAL is a public company and related to the South African Government.

The importance of minimising government-guaranteed debt is an important factor in protecting and enhancing South Africa's international credit rating for the benefit of all individuals and business in general.

6.29.4 South Africa's credit and financial rating (off-sheet or on-sheet finance with reference to government-guaranteed debt)

The relation between SANRAL toll roads and "off-sheet" or "on-sheet" finance is described in this section of the dissertation.

Van Niekerk, (2007: Interview) says that South Africa's international credit rating is of great importance to the Minister of Finance. Government-guaranteed debt has a negative impact on a states financial rating as it is seen as being a liability on the Government. Currently the Minister of Finance has agreed to provide SANRAL with a government guarantee to support loans and bonds for a maximum amount of R6 billion. It is a known fact that SANRAL is negotiating with the Government to increase the government guarantee on loans and bonds to approximately R10 billion. SANRAL is of the opinion that to create the required primary

national road network in South Africa, a government guarantee of approximately R20 billion is needed. All funding supported by the Government guarantee may be seen as being on-sheet financing as this could negatively affect the international credit rating of the South African Government. The Minister of Finance is in favour of reducing government-guaranteed debt.

SANRAL recognises that there is pressure on the National Treasury to provide funds to address the socio-economic requirements of the South African public. Therefore, SANRAL searched for alternative means to finance the development and maintenance of the required primary road network. The result of these investigations is that SANRAL itself is now financially accredited to obtain loans and bonds from the local and international capital and money markets. Funds acquired by SANRAL without the support of the government guarantee can be described as being off-sheet financing, as this does not affect the credit rating of the South African Government. The fact that SANRAL toll roads can now be developed and maintained with funds not related to the government guarantee, could imply that the Government should have more funds available to address the socio-economic needs of South Africa. Although for the foreseeable future SANRAL would probably still utilise the government guarantee to obtain additional funding, the self-financing of SANRAL toll roads could limit the use of the government guarantee. This may enhance the international financial rating of the Government, as its allocation to the guarantee to ensure the construction of national roads could be reduced (Van Niekerk, 2007: Interview).

Concession toll roads do not affect the financial rating of the Government as the required funds are obtained by the concession company without any government intervention. Due to the possible financial risks, for instance the availability of alternative routes, the possible development of more Concession toll roads are limited. Only a few roads are viable to be transformed into Concession toll roads due to the financial risks involved for the investors in the concession company. Investors generally require a good return on investment and Concession toll roads could be a risky financial investment. It is possible for investors to invest their capital in projects with a lower risk profile. In Italy some concession companies did not achieve any financial profit by developing and maintaining Concession toll roads. This again could emphasise the importance of utilising SANRAL toll roads to develop the required primary national road network in South Africa. When and if possible, Concession toll roads should be developed to assist in creating the primary national road network in South Africa. The Bakwena Platinum Highway (between Pretoria and Rustenburg) is a good example of a successful Concession toll road. The SANRAL toll road policy alternative may have the potential to decrease the financial pressure on the fiscus and to reduce government guarantee-related debt (Van Niekerk, (2007: Interview).

The conclusion to this chapter is depicted in the following section.

6.30 Conclusion

This chapter of the dissertation was devoted to indicate that the SANRAL toll road policy alternative might enhance the development and maintenance of the required primary national road network in South Africa. This chapter was also dedicated to the following aspects relating to the SANRAL toll road policy alternative: the history of toll financing, modern toll financing in South Africa, the background to the implementation of SANRAL toll roads in South Africa, the criteria for feasibility, the funding mechanism for SANRAL toll roads established as part of the road privatisation initiative, the usage of collected toll revenues, the role of the public and private sectors in toll roads, the conventional mechanism for the development of toll roads, the lessons learnt from the build-operate-transfer concessions, the need to develop and maintain SANRAL toll roads, an integrated road management system, the economic rationale for SANRAL toll road financing, the economic arguments on why only congested roads should be tolled, the potential financial contribution of SANRAL toll road financing, the economic viability criteria for new SANRAL toll road projects, the financial feasibility criteria, the financing policy changes resulting from the 1994 toll road refinancing strategy, international public sector road authority models, financing sources for toll roads, the fuel levy versus toll financing, the debt-related methods, the anticipated results of the SANRAL toll road policy alternative, the economic acceptance of SANRAL toll roads, political acceptance of SANRAL toll roads, the tolling of new and existing freeways may create a self-financing primary national road network, the recommendations of the Toll Road Investigations – Co-ordinating Committee, and the current situation regarding the SANRAL toll road alternative.

The latter section of this chapter was dedicated to the analysis of the SANRAL toll road policy alternative in terms of the selected primary criteria. The criteria utilised were the following: the capability of the SANRAL toll road policy alternative to provide and promote a primary national road network in South Africa, the financial risk of the SANRAL toll road policy alternative, the borrowing capacity of SANRAL, and South Africa's credit and financial rating ("off-sheet and on-sheet" financing with reference to government debt). The research indicates that Concession toll roads are possibly limited to roads where the financial risks are limited and acceptable to private company investors. In Italy it has been proven that Concession toll roads will not always succeed in producing profits. The research also indicates that in recent history the SANRAL toll road policy alternative was totally dependent on a government guarantee to obtain the required loans and bonds from the capital and money markets. SANRAL, however, is also currently financially accredited to obtain the

necessary funding from the local and international capital and money markets to develop and maintain the required primary national road network in South Africa. The study also indicates that SANRAL toll roads in the past have successfully served the road users of South Africa. The SANRAL toll road between Johannesburg and Bloemfontein is an example of an effective and efficient SANRAL toll road. The analysis concludes that the SANRAL toll road policy alternative might enhance the development and maintenance of a primary national road network in South Africa. This could be due to the availability of the government guarantee of R6 billion (which may be increased to R10 billion in due course) and the fact that SANRAL may now also obtain the necessary funding from the local and international capital and money markets, as it was financially accredited by an independent agency.

Chapter 7 is dedicated to the analysis of the Concession toll road policy alternative. For the purpose of this research it is necessary to ascertain whether the Concession toll road policy alternative could enhance the primary road network of South Africa and to compare it with the SANRAL toll road policy alternative.

CHAPTER 7

THE CONCESSION TOLL ROAD POLICY ALTERNATIVE

7.1 Introduction

This chapter of the dissertation is dedicated to the analysis of the Concession toll road policy alternative and its capability to provide a primary national road network in South Africa. This chapter is devoted to describe the following: the Concession toll roads currently in operation in South Africa, unsolicited bids as part of the Concession toll road policy, and the South African National Roads Agency Limited's (SANRAL's) policy in respect of unsolicited bids. The Concession toll road policy alternative is also analysed in terms of the selected primary criteria as agreed upon with the relevant employees of SANRAL. The last section of this chapter is a conclusion regarding the Concession toll road policy alternative's capability to provide the required primary road network in South Africa.

Van Niekerk, (2006: Interview) says the third policy alternative for the construction and maintenance of a primary national road network is the Concession toll road policy alternative. With Concession toll roads the concessionaire is responsible to develop, build and operate the national road. Concession toll roads are also referred to as build, operate and transfer (BOT) projects. The payment of the costs pertaining to the development (designing and planning) of the Concession toll road is negotiated between the concessionaire and SANRAL. Generally, concessionaires tender for the development, building and operating of a specific Concession toll road. Several contractors usually create a concession company to successfully develop, build and operate such an important national road. The concession company is generally totally responsible for financing the development, building, operation and maintenance of the Concession toll road without any funding being covered by the government guarantee. The concession contract between SANRAL and the concession company is normally for a period of 30 years, whereafter the road reverts back to SANRAL. The advantage is that after the 30-year period SANRAL takes control of an existing high quality national road. Another advantage for SANRAL is that its costs with reference to Concession toll roads are relatively low, which enables SANRAL to invest available funding in other urgent road projects. SANRAL's liability and responsibility towards Concession toll roads is also limited, as the concession company is responsible and liable for all aspects pertaining to the Concession toll road. The Bakwena Platinum Concession toll road between Pretoria and Rustenburg is an example thereof. A negative aspect of Concession toll roads is the duration between the development and the actual

construction of the road due to the complex and time-consuming tender and negotiating processes. The concession company is a private business and therefore the possible income and expenditure relationship of such a road is of high importance. Prospective concessionaires are only interested in a Concession toll road project, if such a project will produce a certain financial profit for the investors in the concession company. SANRAL toll roads may also be less expensive to develop and maintain due to the fact that the concession company should pay all relevant government taxation. The concession company generally has private investors that expect a good or fair return on their investment. Any Concession toll road is therefore established on good financial principles. Generally, the concessionaire will do a cost-benefit analysis to forecast the possible financial inputs and outputs of a project. The concession company and its shareholders will expect the Concession toll road to provide financial gain in the long term. Concession toll roads do not affect the credit rating of the Government, as it's funding is not guaranteed by the government cover.

Van Niekerk, (2006: Interview) is of the opinion that some concession companies may be rushed in completing the construction of the Concession toll road and this could compromise the quality of the road. The sooner the concessionaire opens the toll gates, the quicker they will be able to generate money. The concession company should adhere to the quality standards as set by SANRAL.

As mentioned above, the concession company must take control and responsibility for the relevant Concession toll road and must adhere to the principles and regulations of the concession contract. The costs and risks of building and operating the Concession toll road are the liability and responsibility of the concession company (Van Niekerk: 2006: Interview).

Van Niekerk, (2006: Interview) says that generally the concession company provides 20% equity pertaining to the Concession toll road project. The remaining 80% of the capital required for the development (as negotiated with SANRAL), operation and maintenance of the Concession toll road are usually funded by virtue of loans from various financial institutions (which is the responsibility of the concession company to obtain). Concession toll roads may be seen as just another policy to finance the development, building and operation of the primary national roads in South Africa and furthermore concession companies generally require achieving a profit margin of approximately 15% on their financial investment. The utilisation of further Concession toll roads may be limited due to the fact that several of the probable profitable national routes are already established as Concession toll roads.

Tolplan (Pty) Limited in its discussion paper (Strategic Options & Policy Implications for Toll Roads in South Africa, 1995: Chapter 5: 30) is of the opinion that Concession toll roads policy alternative should also be utilised and that the concession company be appointed on a competitive basis without any financial guarantees from the Government. Tolplan is also of the opinion that international experience indicates that both Concession and SANRAL toll roads have a function in developing the primary national road network in South Africa.

It is important to mention that the Concession toll road policy alternative addresses the limited funding availability without compromising the integrity of the fiscus. Concession toll roads can also be funded through direct overseas investment, which may benefit the country as a whole (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 31

SANRAL has accepted the fact that the funds exclusively received from the fiscus are inadequate to meet the growing national road expenditure demand, and consequently a conservative financing policy had to be developed to minimise financial risk for both SANRAL and the National Treasury. The most advantageous solution was found in the Concession toll road policy alternative, which is based on the user-pay principle, allowing for off-balance sheet financing. This policy has decreased the pressure on the fiscus and may ensure an economically balanced primary national road network that could increase the economic potential of under-developed areas (The South African National Roads Agency Limited: Annual Report, 2005: 5).

Although the funding of the construction, operation and maintenance of the Concession toll road for the duration of the concession period remains the responsibility of the concession company, the revenue received from the toll accrues to the account of the concession company (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

Concession agreements on three primary roads have been entered into by SANRAL and these Concession toll roads should be financed, developed (SANRAL may fund some portion of the development costs), constructed, operated and maintained by the concession companies. SANRAL, does not fund any of these Concession toll roads and the projects do not form part of the government balance sheet. This funding policy is favoured and pursued by SANRAL as it ensures that the economic arteries of South Africa are not blocked. The three primary roads to be concessioned are National Route 2 (N2) (the Wild Coast toll highway), National Routes 1 and 2 (Winelands toll highway) and Route 300 (Cape Town ring

road). These Concession toll roads are all in the development phase (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

Van Niekerk, (2007: Interview) is of the opinion that the Concession toll road policy alternative may also enhance the development and maintenance of the primary national road network in South Africa. The SANRAL toll road policy alternative could be the policy most utilised in the future, due to the fact that some of the profitable national roads are already Concession toll roads and investors are not prepared to invest in a concession company if the financial risk profile is not favourable or predictable.

Currently in South Africa there are established Concession toll roads operating effectively and efficiently.

7.2 Concession toll roads currently operating

SANRAL has been successful in attracting overseas direct investment into a number of Concession toll roads by virtue of concession agreements, bringing additional capacity, funding, innovation, effectiveness and efficiency into promoting economic growth and expansion. The multiple effects of Concession toll roads infrastructure expenditure add to social and economic growth through job creation and economic activity (The South African National Roads Agency Limited: Annual Report, 2005: 23).

During the 2004/2005 financial year, SANRAL has concessioned the National Route 4 (N4) extension (from the border of Gauteng/Mpumalanga to the Hans Strydom interchange on the outskirts of Tshwane to Trans African Concessions (Pty) Limited (TRAC), with a contract worth approximately R300 million. The expenditure figures reflected in Table 7/1 below indicate the contribution made to the maintenance and development expenditure of Concession toll roads by the private sector. The Concession toll road policy that promotes partnerships with private sector companies could ensure the continuous sustainability of some national roads at no cost to SANRAL and the South African Government for a period of 30 years (The South African National Roads Agency Limited: Annual Report, 2005: 24).

SANRAL's continued objective is to reduce its dependence on the government guarantee and to exploit the existing facility of R6 billion. Concession toll roads therefore is a policy alternative available to SANRAL to develop and maintain the primary national roads in South Africa without using the government guarantee for the funding of the national road network (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

Table 7/1: Concession toll roads currently operating

Concession toll road	Concession company	Project length (km)	Reduction of Non-toll primary road network (km)		Annual capital and maintenance expenditure (R million) ²	
			National	Provincial	Capital	Operational
N3 Cedara to Heidelberg	N3 Toll Concessions (Pty) Ltd	420	180	-	74	84
N4 Witbank to Maputo	Trans African Concessions (Pty) Ltd	512	350	60	86	91
N4 Platinum highway (Pretoria to Rustenburg)	Bakwena Platinum Concession Consortium (Pty) Ltd	484	124	260	259	66
Total		1 416	654	320	419	241

Source: adapted from the South African National Roads Agency Limited: Annual Report, 2005: 24.

Van Niekerk, (2007: Interview) says that Concession toll roads have brought huge international investment to South Africa that may have created economic growth in certain regions and that quite a few opportunities for job creation were established. The Concession toll road policy also enabled SANRAL to extend and promote the primary road network within South Africa. SANRAL by providing and developing the primary road network serves the basic needs of the South African public by providing roads that promote road transport in South Africa. The creation of wealth through infrastructure is the ultimate goal of SANRAL and the Concession toll road policy is assisting SANRAL in attaining this goal. Although Concession toll roads may stimulate economic growth in certain regions, the SANRAL toll road policy alternative could also enhance economic development. The proposed Gauteng toll road network will possibly be developed as SANRAL toll roads due to the high financial risk it may have for concession companies. This could be an indication of the potential of SANRAL toll roads in promoting economic development in inter urban areas.

Unsolicited bids are part and partial of the Concession toll road policy of SANRAL.

7.3 Unsolicited bids as part of the Concession toll road Policy

Unsolicited bids as part of the Concession toll road policy alternative are described in this section of the chapter.

SANRAL has developed an inventive policy termed “Policy of the South African National Roads Agency Limited in respect of unsolicited proposals” dated May 1999, dealing with initiatives identified by concession companies. This policy was developed in view of the Government’s commitment to develop and maintain primary national roads and services in partnership with the private sector, thereby utilising the benefits of private sector funding, innovation, efficiency and skills. The purpose with the policy is to persuade the private sector to recommend self-funding Concession toll road projects for consideration by SANRAL (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 30).

Van Gerve, (2003: Interview) says that unsolicited bids should be seen as a being part and partial of the Concession toll road policy alternative, since after the initial design of the road has been completed by the scheme developer, a concession company will be appointed by virtue of a competitive tender process to actually implement and further develop the Concession toll road. The scheme developer is also allowed to tender for the implementation and construction of the relevant Concession toll road.

Under this policy, numerous and innovative Concession toll road projects have been proposed, which SANRAL is prepared to accept and implement. The following Concession toll roads are in different stages of development:

Table 7/2: Proposed concession toll roads

Proposed concession toll roads	2004 Rand
The N1/N2 Winelands toll highway (142 km)	R5.9 billion
The N2 Wild Coast toll highway (540 km)	R7.3 billion
The R300 Cape Town ring road (68 km)	R2.8 billion

Source: adapted from the South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 30.

As with Concession toll roads, as mentioned previously, SANRAL shares the costs associated with the design and development with the developer of the unsolicited bid. Other costs, including construction, operation and maintenance costs are the responsibility of the

concession company. These Concession toll road projects are procured on a build, operate and transfer (BOT) basis, and has been successfully implemented on National Route 4, the Maputo Development Corridor. The value of the unsolicited bid policy was proven during the feasibility study of the proposed National Route 1, Gauteng primary road network, between Pretoria and Johannesburg. This study indicated that Concession toll roads are not a financially viable policy alternative, due to the financial risks involved for the possible concession company investors, and will therefore be developed, operated and maintained as a SANRAL toll road network (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 30).

There are currently three Concession toll roads, initiated by unsolicited bids that are in different stages of development:

(a) The National Route 2 (N2) Wild Coast Concession toll road.

The progress with the Wild Coast Concession toll road has unfortunately and to the probable disadvantage of the poor, been strained as a result of the ministerial decision from the National Department of Environmental Affairs and Tourism (DEAT) on 9 December 2004 to disallow the Record of Decision (ROD). The Wild Coast Concession toll road has been identified to promote the economic growth within the affected areas in accordance with the Government's spatial development initiative (SDI) strategy. In line with the SDI, the development of a primary road was identified as an important catalyst for economic growth and to enhance development opportunities in the short and long term. SANRAL is in the process of analysing the report and the Minister's conclusions to ascertain what may be retrieved from the original process and plan the way forward. The intent to toll process will only be continued once the environmental approval (ROD) has been obtained (The South African National Roads Agency Limited: Annual Report, 2005: 24).

(b) National Route 1 and 2 Winelands Concession toll road.

The environmental impact approval was issued in September 2003. Appeals against the decision were provided to the Minister of Environmental Affairs and Tourism during November 2003. The Minister's decision in this regard is still awaited (The South African National Roads Agency Limited: Annual Report, 2005: 25).

(c) R300 Cape Town ring road.

This scheme makes provision for 61 km of a new Concession toll road that links all the important arterials feeding into central Cape Town. The environmental impact assessment process has already been completed with the publication of the interim report, the comments of which were incorporated into the final report. The final report will be provided to the Minister of Environmental Affairs and Tourism in due course (The South African National Roads Agency Limited: Annual Report, 2005: 25).

Van Niekerk, (2007: Interview) is of the opinion that the above-mentioned Concession toll roads indicate that private or concession company involvement in the development and designing stages of a Concession toll road does not necessarily enhance the process of actually constructing the relevant roads. It is probable that SANRAL as a public company would be able to obtain the required approvals quicker and therefore more efficiently in comparison with the private companies. It is a time-consuming process for a concession company to obtain the relevant approvals from the Minister of Environmental Affairs and Tourism, and if the relevant roads were developed as SANRAL toll roads, the environmental impact assessments (EIA) and the record of decision (ROD) may be obtained in a shorter period of time. This indicates that the involvement of private companies in these processes could actually delay the construction date of such important primary roads.

Van Gerve, (2007: Interview) is also of the opinion that SANRAL could obtain records of decision and environmental impact assessment approvals in a shorter period of time in comparison with concession companies and it should be seen as an advantage of the SANRAL toll road policy alternative.

The next section of this chapter is utilised to provide more information regarding SANRAL's policy in respect of unsolicited bids.

7.4 SANRAL's policy with respect to unsolicited bids

SANRAL's policy with respect to unsolicited bids is further described in this section.

SANRAL, in support of the Minister of Transport's endeavour to encourage innovation and to create new opportunities for the private sector, is eager to receive proposals for national road transport network development. The policy guideline dated September 1997 was drafted in order to provide the private sector with a framework within which unsolicited proposals should be prepared. The policy guideline also illustrates how proposals will be

dealt with by SANRAL, and explains procedures, which will be followed in order to promote a competitive environment, ensure transparency, and protect the public from monopolistic practices and exploitation. Proposals should conform with governmental aims, be in the interest of the public, circumvent the establishment of monopolistic practices, not seek to place arduous conditions upon the Government, for example, no explicit government guarantees will be issued, and reflect environmental, social and economic sustainability (The South African National Roads Agency Limited: Horizon Twenty Ten, 2002: 54).

Van Niekerk, (2007: Interview) is of the opinion that SANRAL's unsolicited bid policy is aimed at promoting private sector involvement in the provision of the required primary national road network in South Africa. This policy may promote the utilisation of private sector innovation and funding in providing the necessary primary road network. The unsolicited bid policy may enhance off-sheet financing of toll roads in South Africa.

The next section of this chapter is utilised to analyse the Concession toll road policy alternative in terms of the following selected primary criteria: the capability to provide and promote a primary national road network in South Africa, the financial risk of developing and operating a national toll road, the borrowing capacity of SANRAL, and South Africa's credit and financial rating (off-sheet financing or on-sheet financing with reference to government-guaranteed debt).

7.5 The analysis of the Concession toll road policy alternative in terms of the selected primary criteria

This section of the chapter is utilised to analyse the Concession toll road policy alternative in terms of the primary criteria that were developed in conjunction with some employees of SANRAL.

The following section is dedicated to the analysis of the Concession toll road policy alternative's capability to provide and promote a primary national road network in South Africa.

7.5.1 The capability to provide and promote a primary national road network in South Africa

The capability of the Concession toll road policy alternative to provide and promote a primary national road network in South Africa is described in this section of the dissertation.

The Concession toll road policy alternative has already promoted the primary national road network in South Africa. Some of the most important toll roads in South Africa are currently Concession toll roads. The National Route 3 (N3) toll road (between Johannesburg and Durban), the National Route 4 (N4) toll road (between Pretoria and Rustenburg) and the N4 Maputo Development Corridor (between Pretoria and Mozambique) are all examples of existing Concession toll roads that are operating effectively and efficiently. These toll roads are of economical importance to South Africa and form part of the primary national road network of South Africa (Van Niekerk, (2006: Interview).

Van Niekerk, (2006: Interview) says that although Concession toll roads enhanced the primary road network in the past, the utilisation of the Concession toll road policy alternative could be limited due to the fact that most of the appropriate national roads suitable for Concession toll road purposes have already been established as Concession toll roads.

Van Niekerk, (2006: Interview) and Van Gerve, (2007: Interview) both say that the concession companies tend to be ineffective in obtaining the necessary ROD and EIA approvals from the Minister of Environmental Affairs and Tourism. The proposed N1/N2 Winelands toll highway, the R300 Cape Town ring road and the N2 Wild Coast toll road have all been negatively affected by this tendency. Van Niekerk, (2006) and Van Gerve, (2007) are both of the opinion that if these applications were dealt with by SANRAL, the process of obtaining these approvals could have been much shorter and therefore more efficient. This time-consuming process of obtaining the relevant approvals could influence the prospective capability of Concession toll roads to provide and promote the required primary road network in South Africa.

Essa, (2007: Interview) says that concession companies generally need to provide funds for the initial set-up costs of the company. This may include the acquisition of appropriate offices, and other infrastructure and human resources. The SANRAL toll roads are administered and managed by SANRAL, which indicates that the SANRAL Toll road policy alternative is not affected by the initial set-up costs or problems of the Concession toll road policy alternative.

Kotze, (2007: Interview) also says that the concession companies may be burdened with initial set-up costs which could promote the utilisation of the SANRAL toll road policy alternative.

Essa, (2007: Interview) and Van Niekerk, (2007: Interview) are both of the opinion that a concession company has a profit motive and objective. This could limit the impact of

Concession toll roads in the future if possible feasibility studies indicate that the probable income and profit from the proposed toll road is insufficient or undesired.

Essa, (2007: Interview) further states that SANRAL toll roads are not affected by a profit motive, as SANRAL is a public company and neither is it necessary for a SANRAL toll road to be profitable. A concession company requires being profitable and this may have an effect on the toll levy payable on a particular Concession toll road.

Essa, (2007: Interview), as well as Kotze, (2007: Interview), are of the opinion that Concession toll roads could be affected by the fact that the concession company still needs to pay government taxation on profits. SANRAL as a public company does not produce a profit and this could also be an advantage of the SANRAL toll road policy alternative.

Practical experience indicates that SANRAL might obtain loans at lower rates than concession companies. This could promote the utilisation of SANRAL toll roads rather than Concession toll roads. The high interest rate of loans may in practice affect the toll levy payable on a particular toll road (Essa, 2007: Interview).

Since the South African Roads Board (SARB) took responsibility for certain toll road projects in April 1991, it has confirmed that the Government is capable to obtain the required capital and money market loans at lower interest rates than the private companies had been able to. Funds for private companies are available, though at a higher price (Smit & Jamieson, 1995: 26).

Van Niekerk, (2007: Interview) is further of the opinion that self-funding toll roads are limited and this may also limit the utilisation of Concession toll roads, as these roads are required to be self-funding and to produce a profit for the investors.

In South Africa a very limited number of toll road projects are completely self-funding. The reasons for this could be the low traffic volumes on national roads, as well as the public's unwillingness to pay a market-related toll. Subsequently, with a few exemptions, it is usually necessary for the Government to provide equity to the toll road projects. This could be by means of funding provision, an annual subsidy, or by yielding the use of current assets (tolling existing roads) (Smit & Jamieson, 1995: 26).

Essa, (2007: Interview) is further of the opinion that the total cost of a Concession toll road project could be at least 2% higher in comparison with a SANRAL toll road project. The high cost of developing, constructing, maintaining and operating a Concession toll road may

affect the capability of the Concession toll road policy alternative to provide and promote the required primary national road network.

Smit, (2006: Interview) says the potential financial risk a Concession toll road may have for its investors could be the most important factor that may limit the future utilisation of the Concession toll road policy alternative. The financial risks relating to the development, construction, maintenance and operation of a Concession toll road may limit the capability of this policy alternative in providing and promoting the development of the required primary road network.

Smit, (2006: Interview) further states that the Concession toll road policy alternative is currently still relevant and should be utilised where appropriate. The Concession toll roads may be seen as being public-private partnerships in providing the required road network in South Africa.

In the United States of America, in California, the first Concession toll road was opened in 1995. This was the construction of the 16 km section of Route 91 in Orange Country. This Concession toll road has been constructed in the median of an existing freeway. Tolls are collected by means of fully automatic vehicle identification technologies, as toll plazas could not be constructed in the limited space available. Toll levies vary depending on the time of day and congestion levels on the Concession toll road. The required funds are being raised guaranteed by the private sector. The road is to be returned to the state within a period of 30 years. There is a growing interest internationally in involving the private sector in the provision of Concession toll roads. This is mainly in order to draw on private sector finance (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa 1995: Chapter 5: 13).

The first important Canadian Concession toll road constructed was Highway 407 near Toronto, Ontario. This Concession toll road is a bypass to Toronto and is one of the busiest highways in Northern America. The Ontario Government decided to develop the road by means of a public-private partnership between a concession company and the roads authority. The roads authority decided that the financial risk was too high for the concession company and opted to finance the project itself. A development and construction agreement was signed rather than a build-operate-transfer agreement. The funding cost was lower due to better loan rates because the province was borrowing the required funds. The results were lowered toll levies and more acceptances from the public (Tolplan (Pty) Ltd: Discussion Document on Strategic Options & Policy Implications for Toll Roads in South Africa 1995: Chapter 5: 15).

Private sector-driven projects are generally developed and constructed more rapidly than government projects where bureaucratic activities could delay the completion of a toll road project (Smit & Jamieson, 1995: 26).

In practice, the development, construction, maintenance and operation of SANRAL toll roads also involve the private sector by means of tenders and private sector contracts. Private sector efficiency is utilised in the development and construction of a SANRAL toll road (Van Niekerk, 2006: Interview).

The Concession toll road policy alternative has previously provided and promoted the primary national road network of South Africa, and will probably in future continue to do so. Although Concession toll roads have effectively and efficiently contributed towards the current primary national road network, the possible financial risks pertaining to Concession toll roads may limit its utilisation in future (Van Niekerk, 2006: Interview).

The financial risks pertaining to Concession toll roads are described in the following section.

7.5.2 Financial risk

This section is dedicated to the financial risks pertaining to Concession toll roads.

The financial risk factor for investors in Concession toll roads may be the most important reason why Concession toll roads could have a limited impact in creating the primary national road network in South Africa. Investors are in business to improve their financial positions and would not invest in a road project that could result in great financial losses. If the toll road project cannot guarantee a good return on investment, Concession toll roads may not be a good investment and there are other opportunities available in the capital and money markets to ensure an acceptable profit. SANRAL has the goal to provide roads that could serve the basic needs of the people of South Africa. SANRAL toll roads are not developed to produce profits and are therefore more appropriate in providing good national roads in the less congested areas or regions of economical importance. If the financial risk of National Route 17 (N17) and the proposed Gauteng toll road project were considerably lower, than Concession toll roads may have been an alternative. The availability of alternative routes may be identified as a financial risk during feasibility studies. SANRAL, with the utilisation of the government guarantee and the possible availability of finance in the Portfolio Fund, may be able to develop and construct SANRAL toll roads, which private companies could view as being too much of a financial risk (Van Niekerk, 2007: Interview).

The financial risks for the concession company could be seen as the most important factor limiting the utilisation of Concession toll roads in providing and promoting the required primary national road network. The following may be viewed as being the financial risks pertaining to Concession toll roads:

- (a) The requirement of concession companies to pay tax on profits. A concession company is established with a profit motive, and the taxation of profits could enhance the financial risk of the concession company.
- (b) The time-consuming process of obtaining the required ROD and EIA approvals from the Minister of Environmental Affairs and Tourism. This may delay the actual construction of the roads. The longer this process continues, the longer the concession company must wait to open the relevant toll plazas and start collecting the levies payable for the usage of the road. This may be viewed as being a financial risk for the concession company.
- (c) High interest rates and increasing inflation are financial risks to a concession company, as it could contribute to increased costs in developing, constructing and operating a Concession toll road.
- (d) The initial funding required to set-up the concession company and the acquisition of the necessary human and infrastructure resources could also be a financial risk to the concession company as this funding may affect the profitability of the Concession toll road project and the relevant cost should therefore be kept as low as possible.
- (e) The total cost of the Concession toll road project may be seen as a financial risk because the concession company is a private company and is required to produce an acceptable profit at the end of the project life cycle.
- (f) The availability of alternative roads and proposed new transport developments, for example the Gautrain, could be seen as being financial risks, as it may affect the profitability of a proposed Concession toll road (Essa, 2007: Interview).

Concession toll roads could and possibly will contribute towards the provision of the required primary network in South Africa, but the financial risks relating to Concession toll roads should be considered in developing new roads schemes in South Africa. Although there are financial risks involved, in the developing and operation of SANRAL toll roads it is not a prerequisite for SANRAL toll road projects to be completely self-funding or to produce a certain amount of profit (Van Niekerk, 2006: Interview).

The borrowing capacity of SANRAL may affect the desirability of Concession toll roads in the future.

7.5.3 The borrowing capacity of SANRAL

The capability of SANRAL to obtain loans and bonds from the local and international money and capital markets could influence the utilisation of Concession toll roads in the future.

It is now envisaged that it will cost approximately R30 billion to develop the required primary national road network in South Africa. The estimated cost of developing the proposed Gauteng primary road network is approximately R22 billion. A recent development is that SANRAL was accredited by an independent accreditation company and is now able to acquire the required finance for the development of the primary road network by means of loans and bonds raised from the local and international capital and money markets. SANRAL is also still in a position to obtain the required funding with the assistance of the government guarantee. The government guarantee is applicable to amounts not succeeding R6 billion (Van Niekerk, 2007: Interview).

It is a financial objective of SANRAL to decrease its dependence on the government guarantee and to better utilise the current facility of R6 billion. SANRAL recently obtained a credit rating zaAA long-term and zaA1 + short-term and provide an opportunity to investigate non-guarantee financial policies (The South African National Roads Agency Limited: Declaration of Intent, 2005 - 2008: 17).

Essa, (2007: Interview) also states that SANRAL has obtained financial credit ratings from an independent agency regarding access to the local and international capital and money markets. The following accreditations were awarded to SANRAL: zaAA long-term and zaA1+ short-term for the local market, and Aa2.za long-term and P-1.za short-term with stable outlook for the international capital and money markets. This could be a progressive development in the provision and maintenance of a primary national road network in South Africa, as SANRAL is now in a position to obtain additional funding from the local and international markets without the assistance of the government guarantee.

The fact that SANRAL is now in a position to finance SANRAL toll roads by means of loans and bonds obtained from the local and international capital and money markets may enhance the utilisation of the SANRAL toll road policy alternative in providing the required primary national road network in South Africa. The effectiveness and efficiency with which SANRAL could obtain the required funds from the capital and money markets may be known in due course. The impact of this development is still unclear and the influence this may have on the utilisation of the Concession toll road policy alternative would only be known at a future date. It is possible that this new SANRAL funding mechanism might influence the

utilisation of the Concession toll road policy alternative. Notwithstanding the possible effects of this new development regarding the SANRAL toll road policy alternative, Concession toll roads (public-private partnerships) may still have an important role to full fill in the provision of the required primary road network (Van Niekerk, 2007: Interview).

The credit and financial rating of South Africa, which is influenced by government-guaranteed debt and its relation with the Concession toll road policy alternative is described in the following section.

7.5.4 South Africa's credit and financial rating (off-sheet or on-sheet financing with reference to government-guaranteed debt)

This section of the chapter is utilised to analyse the Concession toll road policy alternative in terms of South Africa's international credit and financial rating.

South Africa's international credit rating is of great significance to the Minister of Finance. Government-guaranteed debt has a negative impact on a state's financial rating as it is viewed as being, a liability for the Government. The Minister of Finance has agreed to provide SANRAL with a government guarantee with which to obtain loans and bonds for a maximum amount of R6 billion. Currently SANRAL is negotiating with the Government to increase the government guarantee on loans and bonds to approximately R10 billion. SANRAL is of the opinion that to develop the required primary road network in South Africa, a government guarantee of approximately R20 billion is required. All finance guaranteed by the Government could be seen as being on-sheet financing and may negatively affect the international credit rating of the South African Government. The Minister of Finance is in favour of reducing government-guaranteed debt (Van Niekerk, 2007: Interview).

One of the advantages of the Concession toll road policy alternative is that national roads are being build without affecting the credit rating of South Africa, as all the funds required for the Concession toll road project are obtained by the concession company by virtue of loans, bonds and investments from the local and international money markets, This is described as being off-sheet financing as the government guarantee is not utilised in obtaining the required funding. Funding the Concession toll road is the responsibility of the concession company. Due to possible financial risks, for instance the availability of alternative routes, the potential development of more Concession toll roads could be limited. Only a few national roads are appropriate and feasible to be utilised as Concession toll roads due to the financial risks involved. Investors generally require a good return on investment and Concession toll roads may be risky financial investments if all probabilities are not

considered. Where feasible, the Concession toll road policy alternative could be utilised to develop the primary road network in South Africa and this policy alternative does not affect government-guaranteed debt. The National Route 3 (N3) toll road between Johannesburg and Durban is a good example of a successful Concession toll road. Now that SANRAL is able to obtain finance from the international and local capital and money markets, without affecting South Africa's international credit and financial rating, the SANRAL toll road policy alternative may have the potential to decrease the financial pressure on the fiscus and to reduce government-guaranteed debt (Van Niekerk, 2007: Interview).

The conclusion of this chapter is described in the following section.

7.6 Conclusion

This chapter was dedicated to the analysis of the Concession toll road policy alternative and included the following: an introduction to the Concession toll road policy alternative, Concession toll roads currently in operation, unsolicited bids as part of the Concession toll road policy alternative, SANRAL's policy in respect of unsolicited bids, and an analysis of the Concession toll road policy alternative in terms of the primary criteria selected and developed for this dissertation. It is the conclusion of this research that the Concession toll road policy should still be utilised in future due to its ability to develop, construct, maintain and operate toll roads without the assistance of the government guarantee which indicates that the Concession toll road policy does not have a negative impact on the credit and financial rating of South Africa.

It was attempted to compare the Concession toll road policy alternative with the SANRAL toll road policy alternative but due to the unavailability of appropriate information this was not always possible. For this reason it would be appropriate to read this chapter in conjunction with Chapter 6 before any conclusions or recommendations are made.

All the relevant policy alternatives were analysed in terms of the primary criteria in Chapters 5, 6 and 7 and the next procedure in the policy analysis process is the policy recommendations and conclusion, which are described in Chapter 8.

CHAPTER 8

CONCLUSION AND RECOMMENDATIONS

8.1 Introduction

The purpose with this dissertation is to indicate that the SANRAL toll road policy alternative may enhance the South African National Roads Agency's (SANRAL) capability to provide and enhance the required primary national road network in South Africa effectively and efficiently. In the policy analysis process the SANRAL toll road policy alternative was compared with the other policy alternatives, which are the Non-toll road and the Concession toll road policy alternatives. Each policy alternative was analysed in terms of the primary criteria developed for the purpose of this dissertation in conjunction with some of the employees of SANRAL. The results and recommendations of the research will be provided in the following sections of this chapter.

SANRAL's principle strategic objective is the long-term sustainability of a primary national road network. The understanding of the requirements of national road users, their motivation for utilising national roads and how SANRAL could improve road safety, indicates a primary national road network consisting of both toll and non-toll roads. Taking into account the various demands on tax-based revenues, the development of the primary national road network requires to be strategically financed by policy alternatives, which may decrease the dependency on National Treasury funding to meet the basic national road demands of the public. SANRAL's dilemma is not only limited to the current funding backlog: the continual deterioration of national road pavements is also part of the problem.

The existing primary national road network comprises approximately 14 000 km of road. To create an effective and efficient primary national road network for South Africa, SANRAL needs to increase the current national road network to approximately 20 000 km. SANRAL estimates that it requires approximately R30 billion to protect, develop, construct, operate and maintain such an effective and efficient primary road network. It is estimated that the proposed Gauteng primary road network will cost approximately R22 billion to develop. Since the Government has to attend to and finance several other socio-economic objectives, they can only afford to allocate R1,4 billion per annum to the SANRAL Portfolio Fund. This annual allocation by National Treasury is not even sufficient to maintain and service the current national road network, therefore other policy alternatives of financing the development and maintenance of an effective and efficient national road network is required.

Currently the Government is willing to provide guarantees for loans on the capital and money markets up to the amount of R6 billion. It is envisaged that the government guarantee will be increased to cover loans and bonds up to a maximum amount of R10 billion. This improved government guarantee could, however, not be sufficient to develop the primary national road network required to promote economic growth in South Africa. SANRAL, as the current national roads authority, like its predecessor, has identified the SANRAL toll road policy alternative and the Concession toll road policy alternative as probable alternatives in raising the additional funds required. For the purpose of this study, the Non-toll road, Concession toll road and SANRAL toll road policy alternatives were analysed in addressing the funding requirements of SANRAL. In a South African context all three the policy alternatives have a purpose and function within the primary national road network.

In the following section the Non-toll road policy alternative is described and recommendations provided.

8.2 The Non-toll national road policy alternative

The conclusions and recommendations regarding the Non-toll road policy alternative are provided in this section.

The Non-toll road policy alternative implies that the relevant national roads are developed, constructed and maintained exclusively from the funding receives from the National Treasury on an annual basis.

The survey of the available literature and interviews conducted indicate that the Non-toll road policy alternative may not be effective and efficient in developing the required primary national road network. Approximately 60% of all the Non-toll roads are older than its intended design life and approximately 65% of the National Treasury allocations are being utilised to maintain these roads to a standard that will safeguard the road users. The National Treasury allocations could be insufficient to develop and maintain the current Non-toll national road network in South Africa. This policy alternative's ability to provide and enhance the required primary national road network could be described as being limited.

Due to low traffic volumes and economic feasibility, it is not possible to toll all the national roads in South Africa and the utilisation of the Non-toll road policy is still necessary to develop the required primary national road network within South Africa. It is recommended, if possible that the National Treasury should increase its allocation to the SANRAL Portfolio Fund to minimise the further degeneration of the Non-toll road network and to provide an

opportunity for the development of new Non-toll roads within the primary road network, as it is not feasible or practical to transform all national roads into toll roads. This may enhance the ability of the Non-toll policy alternative to contribute to the development of the required primary road network.

Although Non-toll roads are a necessity within the primary national road network, SANRAL has identified the SANRAL toll road policy alternative as well as the Concession toll road policy alternative as possible policies with which to enhance the development, construction and maintenance of the primary national road network, as the Non-toll road policy is not effective or efficient in providing the required primary national road network in South Africa.

The study indicated that the Non-toll road policy alternative is not capable to provide the required primary national road network in South Africa and it is also not suitable to decrease the dependency on government-guaranteed debt. The Non-toll road policy alternative is furthermore not a viable policy to better maintain the Non-toll roads in South Africa.

In the following section of this chapter the Concession Toll road policy alternative is described and recommendations made.

8.3 The Concession toll road policy alternative

This section of the dissertation is utilised to provide conclusions and recommendations regarding the Concession toll road policy alternative.

Concession toll roads are a valuable policy alternative in the provision of the required primary national road network in South Africa and serve, as an alternative source of revenue for the construction of national roads. Currently, SANRAL requires a policy that could enable them to obtain the necessary funds without utilising the government guarantee. Concession toll roads are funded by virtue of finance acquired by the private sector in the capital and money markets. Concession toll roads may be viewed as public-private partnerships in an attempt to address SANRAL's problem of financing the primary national road network in South Africa. Concession toll roads have been successfully implemented in South Africa, for example the Bakwena Platinum toll road between Pretoria and Rustenburg, as well as the N4 Maputo Development Corridor. Unfortunately this policy alternative also has its limitations. The private sector investors in the concession company generally require a profit return on their investment of approximately 15%. The concession company is created in order to produce a profit for its shareholders. This implies that a Concession toll road should produce a profit to satisfy the needs of the investors. Concession toll roads are utilised by

the concession company to obtain financial gain for the shareholders. Concession toll roads could be described as being burdened by a profit motive. Concession companies, as all private companies, is obliged to pay government taxation on the profits produced by the Concession toll road. This may have an affect on the levies payable for the usage of these roads. The research indicates that the total cost relating to the development, construction and operation of Concession toll roads could be higher in comparison with SANRAL toll roads, due to the fact that private sector companies may obtain the required funds at a higher interest rate in comparison with public companies. A further financial responsibility could be the initial set-up costs, which may include the finance required for the necessary infrastructure and human resources. The fact that the concession company generally has a profit motive indicates the role of financial risks in implementing this policy alternative. If the financial risk profile of a proposed toll road is deemed to be high, possible investors would probably not be interested to invest in such a toll road project. Feasibility studies were conducted on the proposed Gauteng primary road network and Concession toll roads were found to be too much of a financial risk. The result of these feasibility studies is that the proposed Gauteng primary road network could be develop as SANRAL toll roads. This may indicate the limitation of the Concession toll road policy alternative in providing and enhancing the required primary road network in South Africa. The availability of alternative routes in Gauteng may be seen as a financial risk for a concession company. Obtaining the required records of decision (ROD) and environmental impact assessment approvals from the Department of Environmental Affairs and Tourism seems to be a time-consuming process for concession companies or private companies that may delay the development and construction of a proposed toll road. The availability of completely self-funding national roads in South Africa may also be viewed as being limited. These factors could limit the capability of Concession toll roads to provide and enhance the required primary national road network in South Africa.

The advantage of Concession toll roads is that it may provide an opportunity to develop a primary national road of economic importance without the utilisation of the government guarantee. Providing a national road without a government guarantee is described as off-sheet financing as it does not affect the financial and credit rating of the Government in a negative manner. This is in line with current government policy. The National Route 3 (N3) toll road between Johannesburg and Durban is a good example of utilising the Concession toll road policy alternative in developing national roads of economic importance. Another advantage of Concession toll roads is that it brings significant international invests to South Africa. The potential financial risks relating to Concession toll roads (for its shareholders) may be seen as the most important factor that limits the capability of this policy alternative to provide and enhance the primary road network in South Africa. In some foreign countries

government intervention was required to assist concession companies due to financial difficulties and the incapability to obtain the required funds to complete the development of the road projects. High construction, maintenance and operation costs contributed to the limitations of the Concession toll road policy alternative. It is concluded from this research that the Concession toll road policy alternative has contributed to the development of the existing national road network in South Africa and may in future continue to do so.

This study indicated that the Concession toll road policy alternative has a limited capability to provide the required primary national road network in South Africa due to the financial risks relating to Concession toll roads. The availability of self-funding roads in South Africa is limited, which indicates the restricted suitability of this policy alternative in South Africa. The Concession toll road policy alternative could be utilised to decrease the dependency on government-guaranteed debt and to enable SANRAL to better maintain the Non-toll roads in South Africa.

It is recommended that the Concession toll road policy alternative should still be utilised by SANRAL, where feasible and appropriate, to provide and promote the required primary national road network in South Africa. This provides SANRAL with an opportunity to develop the primary road network without utilising the government guarantee, and this is what the Government requires from SANRAL.

The conclusion and recommendations regarding the SANRAL toll road policy alternative are given in the following section.

8.4 The SANRAL toll road policy alternative

The conclusions and recommendations in respect of the SANRAL toll road policy alternative are provided in this section of the dissertation.

SANRAL toll roads have demonstrated its ability to enhance the primary national road network in South Africa. In 1991 there were six SANRAL toll roads in operation. All of these SANRAL toll roads could not cover its total construction costs from toll income, but made a significant contribution towards that costs. In retrospect it may be said that the SANRAL toll road policy alternative has made a contribution towards the extension of the primary national road network. Currently the following SANRAL toll road are in operation and functioning effectively and efficiently: The National Route 1 (N1) toll road between Kranskop and Polokwane, the N1 toll road between Polokwane and Beitbrug, the N1 South toll road between Johannesburg and Bloemfontein, the N2 Tsitsikamma toll road extension, the

Huguenot tunnel and the N17 West toll road. The following SANRAL toll road projects are planned for construction in the near future: The N17 East toll road, the N2 Knysna toll highway, the Gauteng toll road network and various bridges. The SANRAL toll road policy alternative has contributed to the development and provision of the current primary national road network. The fact that the proposed Gauteng toll road project would possibly be built as a SANRAL toll road network indicates the relevancy and importance of this policy alternative in developing the required primary road network in South Africa.

There is no clear evidence that Concession toll roads are more flexible, or more efficient and effective than SANRAL toll roads when developing national road infrastructure. SANRAL toll roads may perhaps be criticised for being too dependent on government regulation rather than the market to provide the desired service. This said, both SANRAL toll roads and Concession toll roads have an important function within the national road network. International experience also indicates that SANRAL toll roads have a role to play in the development of the South African national road network.

Practical experience proved that it is not always possible to utilise the Concession toll road policy alternative in developing a toll road. For the development of the required national road network in Gauteng (especially National Route 1 between Pretoria and Johannesburg), it was concluded that it would not be viable to develop a Concession toll road network, mainly due to the financial risks involved for private companies and private investors. SANRAL decided that it would be more practical to utilise the SANRAL toll road policy alternative in developing the Gauteng toll road network.

The SANRAL toll road policy alternative has the following advantages in comparison with the Concession toll road policy alternative: Firstly, SANRAL is more effective in obtaining the necessary records of decision (ROD) and environmental impact assessments (EIA) approvals from the Minister of Environmental Affairs and Tourism. This indicates that the construction of a proposed toll road may commence at an earlier date. Secondly, SANRAL as a public company does not have a profit motive, which implies that the toll levied on SANRAL toll roads, might be lower. SANRAL as a public company does not produce a profit and therefore no taxation is payable. This may also imply that the toll levy payable on a SANRAL toll road could be lower. Thirdly, SANRAL toll roads are not affected by set-up costs as SANRAL is an established public company, which already possesses the required infrastructure and human resources. Fourthly, it is internationally recognised that the Government and public companies may obtain the required loans and bonds at a lower interest rate in comparison with private companies. In practice this could indicate a lower toll levy as well, because the total cost of the toll road project may be lower. Fifthly, the total cost

of a SANRAL toll road project could be at least 2% lower over the life cycle of the project. In the sixth place, the availability of self-funding national roads in South Africa is limited. A SANRAL toll road does not have to be completely self-funding or produce a profit due to the involvement of SANRAL as a public company. Therefore is it possible to develop a SANRAL toll road on routes with a financial risk, which may not be acceptable to private or concession companies. This could be described as the case scenario for the proposed Gauteng toll road network. Lastly, it should be emphasised that the development, construction, maintenance and operation of a SANRAL toll road also include the utilisation of private sector efficiency, as the services of private companies are obtained through tender and contract (procurement) processes.

The Minister of Finance has indicated that the Government wants to limit its guaranteed debt in order to enhance South Africa's international credit and financial rating. Since then, SANRAL has been accredited by an independent accreditation company and awarded the following accreditation ratings: International credit ratings of Aa2.za for long-term loans and a P-1.za with stable outlook for short-term loans. Local ratings are zaAA for long-term and zaA1+ for short-term loans. This implies that SANRAL now has the ability to obtain funds for SANRAL toll roads from the local and international capital and money markets, which should enable SANRAL to obtain additional finance for the SANRAL Portfolio Fund. The utilisation of the government guarantee of R6 billion in conjunction with funds obtained from the local and international money markets could make it possible for SANRAL to enhance the development and maintenance of the primary national road network in South Africa by means of the SANRAL toll road policy alternative.

It is recommended that the government guarantee for loans be increased to approximately R10 billion due to the increasing cost of road development and construction. It is known that SANRAL requires approximately R30 billion to develop and maintain the required primary national road network in South Africa. It is further recommended that SANRAL utilise and maximise its ability to obtain additional funds from the local and international money markets to enhance and protect South Africa's international credit and financial rating. It is thus recommended that the SANRAL toll road policy alternative be utilised for the provision, development and maintenance of the required primary national road network where appropriate (in consultation with the public) and feasible. It is the conclusion of this dissertation that the SANRAL toll road policy, if utilised in conjunction with the Non-toll road and Concession toll road policy alternatives, may be effective and efficient in promoting and providing the required primary national road network in South Africa. The SANRAL toll road policy alternative could further be applied to decrease the dependency on government-guaranteed debt and to better maintain the Non-toll roads in South Africa. SANRAL has

access to the international capital and money markets, which may enable SANRAL to decrease the dependency on government-guaranteed debt. By applying the SANRAL toll road policy alternative it is possible that more funds will be available to better maintain the Non-toll roads in South Africa, as the SANRAL toll roads should be able to generate sufficient funds to operate independently.

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