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Appendix 1 South Africa¹

1.2 Geography

Total area: 1,219,912 sq km

Land boundaries: 4,862 km *border countries*: Botswana, Lesotho, Mozambique, Namibia, Swaziland, Zimbabwe; Coastline: 2,798 km

Climate: mostly semiarid; subtropical along east coast; sunny days, cool nights

Terrain: vast interior plateau rimmed by rugged hills and narrow coastal plain

Elevation extremes: *lowest*: Atlantic Ocean 0 m - *highest*: Njesuthi 3,408 m

Natural resources: gold, chromium, antimony, coal, iron ore, manganese, nickel, phosphates, tin, uranium, gem diamonds, platinum, copper, vanadium, salt, gas

Land use: arable land: 12% - permanent crops: 1% - permanent pastures: 67% - forests and woodland: 7% - other: 15% (1998 est.); Irrigated land: 13,500 sq km (1998 est.)

1.3 Population

Ethnic groups: black 75.2%, white 13.6%, Coloured 8.6%, Indian 2.6%

Religions: Christian 68% (includes most whites and Coloureds, about 60% of blacks and about 40% of Indians), Muslim 2%, Hindu 1.5% (60% Indians), indigenous beliefs and animist 28.5%

Languages: 11 official languages, including Afrikaans, English, Ndebele, Pedi, Sotho, Swazi, Tsonga, Tswana, Venda, Xhosa, Zulu

Population: 43,647,658; Life Expectancy at Birth total population: 45.43 years (2002 est); HIV/AIDS – adult prevalence Rate: 19.94% (2000 est)

1.4 Government

Government type: republic

Constitution: 10 December 1996; this new constitution was certified by the Constitutional Court on 4 December 1996, was signed by then President MANDELA on 10 December 1996, and entered into effect on 3 February 1997; it is being implemented in phases

1.5 Economy

GDP: purchasing power parity - \$412 billion, real growth rate: 2.6% (2001 est.)

GDP - per capita: purchasing power parity - \$9,400 (2001 est.)

GDP - composition by sector agriculture 3%, industry 31%, services 66% (2000 est.)

Household income by percentage share: lowest 10%: 1% - highest 10%: 46% (1994), Population below poverty line 50% (2000)

Inflation rate (consumer prices): 5.8% (2001 est.)

Budget: revenues: \$22.6 billion - expenditures: \$24.7 billion (2002 est.)

Industries: mining (world's largest producer of platinum, gold, chromium), automobile assembly, metalworking, machinery, textile, iron and steel, chemicals, fertiliser, foodstuffs

Industrial production growth rate: 7% (2001 est.)

Exports: \$32.3 billion (f.o.b., 2001 est.), Import: \$28 billion (f.o.b., 2001 est.)

Exports - commodities: gold, diamonds, other metals and minerals, machinery and equipment

Imports - commodities: machinery, foodstuffs and equipment, chemicals, petroleum products, scientific instruments

Debt - external: \$25.5 billion (2001 est.)

Economic aid - recipient: \$539 million (1999)

1.6 Infrastructure

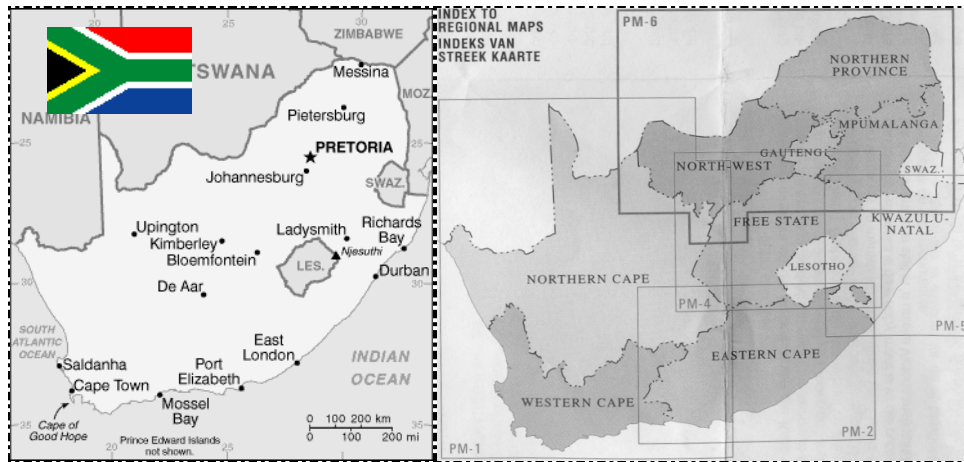
Railways: total: 20,384 km

Highways: total: 534,131 km (paved: 63,027 km - unpaved: 471,104 km (1998 est.))

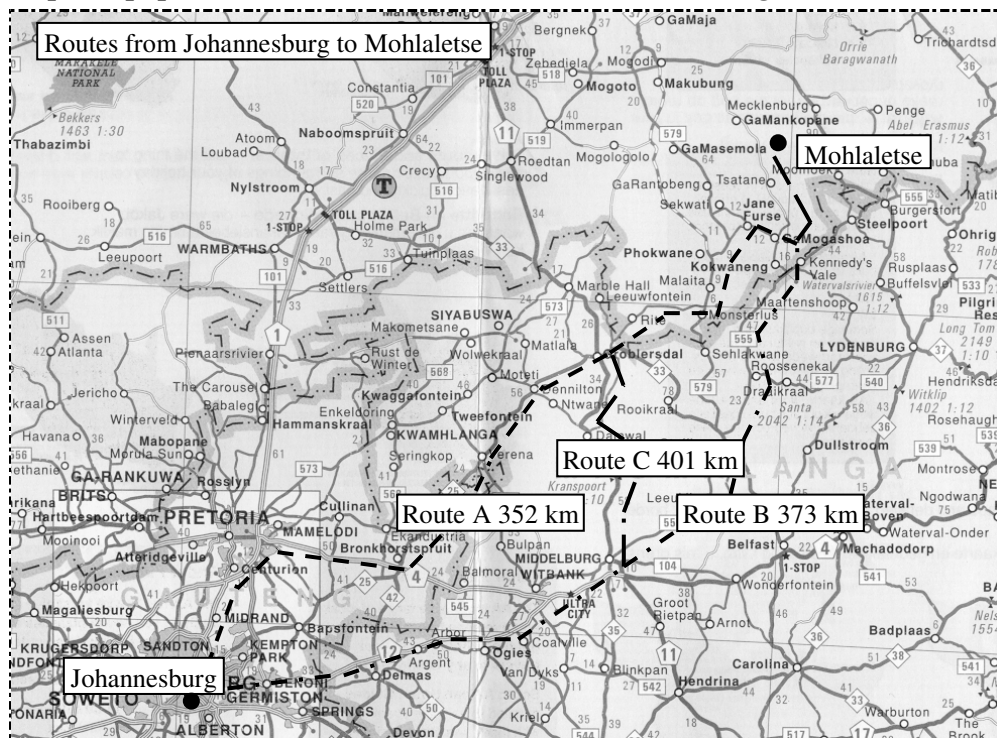
¹ CIA factbook.

Appendix 2 Map

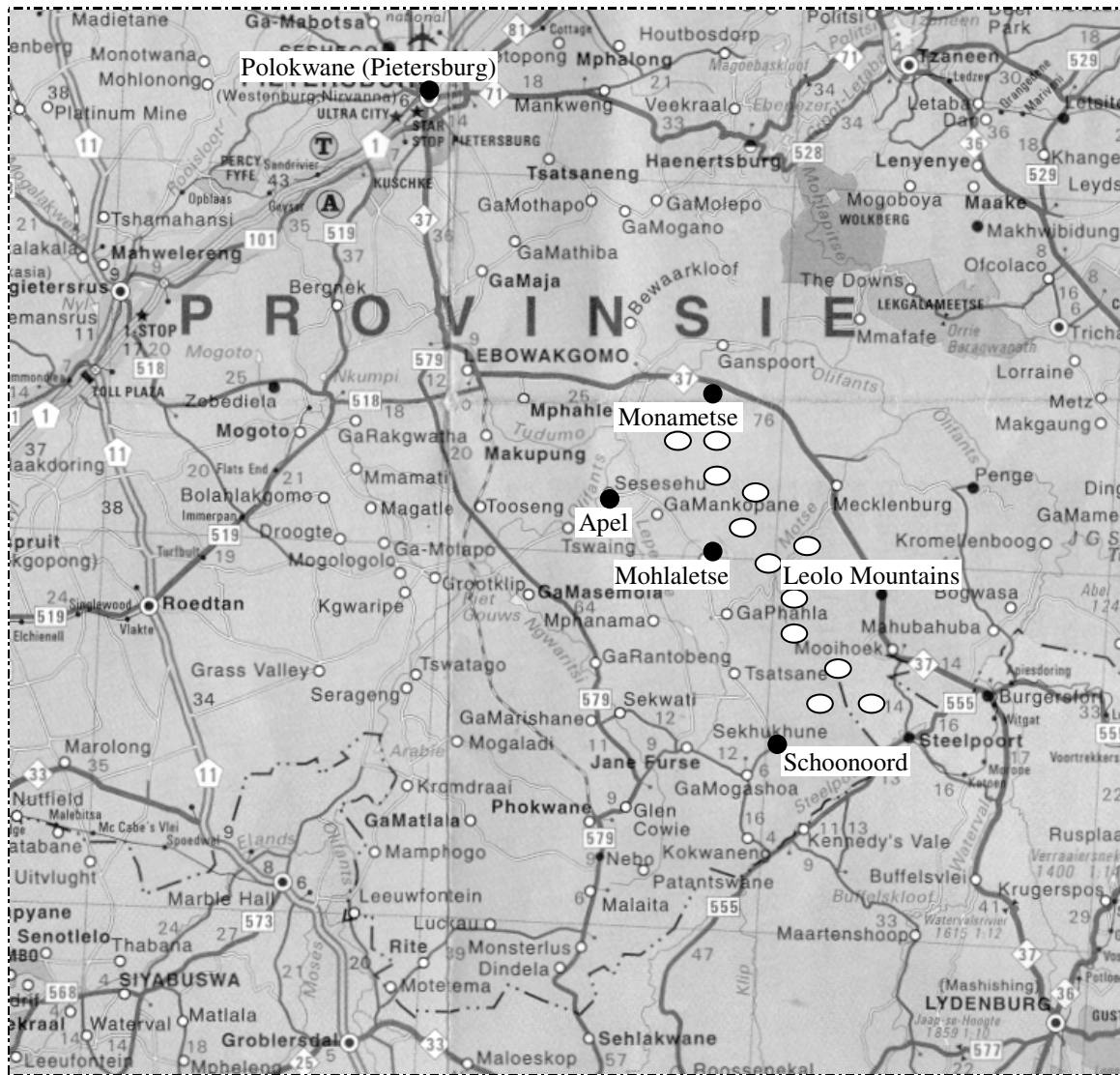
2.2 Map South Africa Provinces



2.3 Map Limpopo Province (Northern Province) and Gauteng



2.4 Map Sekhukhuneland



2.4.1 Sekhukhuneland Information²

Sekhukhuneland is occupied by the BaPedi Tribe
 Paramount Chief K.K. Sekhukhune
 Mohlaletse Village: Number of People approximately 10.000
 Monametse Village: Number of People approximately 900

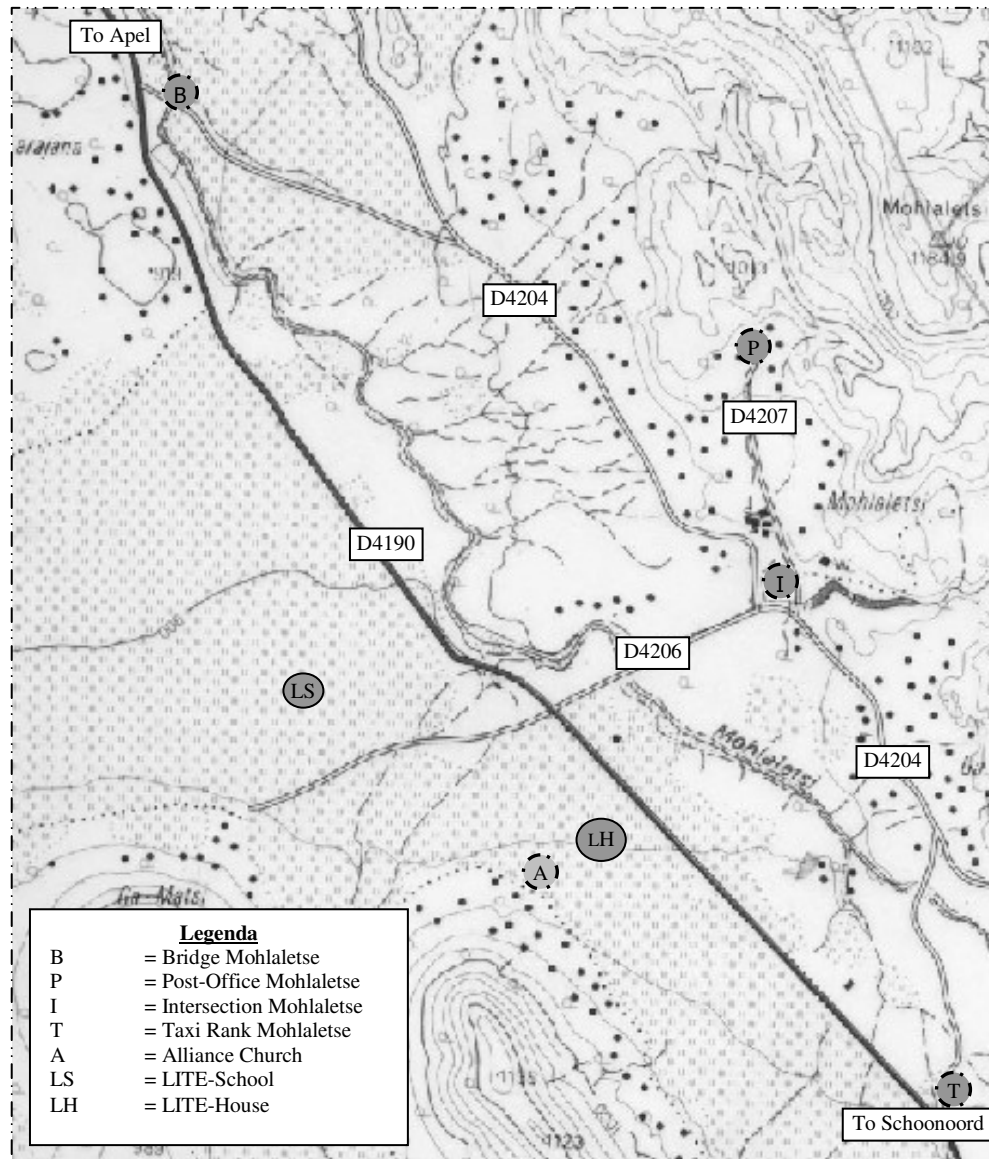
Table A: Mohlaletsi Area

Village	Population	Employed	Un-employed	School/Student	Pensioner	Age <15
Mohlaletsi	9.968	240	2.610	2.307	602	4.168
Monametsi	833	44	209	139	49	392

Fetakgomo Municipality
 Total Population Fetakgomo Municipality 97.113
 Total Number of Households Fetakgomo Municipality 17.334

² Based on data of survey Census 1996

2.5 Map Mohlaletse



2.5.1 Mohlaletse Info

Mohlaletse:

Type Access roads

- Post-office to intersection (is being undertaken now) D4207
- Intersection to Bridge D4204
- Intersection to Taxi-rank D4204
- Intersection to Main-road D4206

Type Provincial roads

- Main-road D4190

Monametse:

Type Access road

- Mine Shaft to Bridge D4195

Appendix 3 Culture

3.1 Concise History of South Africa³ with a focus on the BaPedi Tribe

From the middle of the eighteenth century, a slow political revolution occurred on the High Veldt and in the valleys of the eastern coastal belt⁴. The causes of this are unclear, although they seem most probably to have been related to the increased demand for ivory and other products of the chase, notably leopard skins, among traders on the coast, in modern Mozambique. Again the introduction of maize may have led to an increase in the carrying capacity of the land, but also made communities which relied on it more vulnerable to the droughts which periodically strike central South Africa. From the 1790's, the activities of raiders using horses and firearms from the Middle Gariep river, and ultimately emanating from the Cape Colony, certainly exacerbated and steered the conflicts.

However these various causes should be weighted, the consequences were clear. There was a steady rise in the size of African polities. African rulers with privileged access to the profits of trade were able to distribute the goods they had acquired, thus expanding their networks of patronage.

There were two distinct phases to this process. Until the second decade of the nineteenth century, political consolidation was certainly occurring in the hinterland of Delagoa Bay, both to its west, as Thelure, a chief whose descendants' followers would later be known as the BaPedi, came to dominate the Lydenburg plateau controlling access from the High Veldt to the Bay. This first phase of the process was anything but peaceful. In the High Veldt this involved the conquest of competitors' land and people. However, the wars in question were by no means as total as those which would follow. After 1820, the second phase began, marked by the degree of violence, and also by the size of the polities which emerged out of it. Two developments lay at the heart of this. First, the pressure from the south on the High Veldt became more intense, as Griqua and Kora raiders grew in numbers, acquired more firearms and opened up better markets in the Cape for the products of their activities, which included a small number of de facto slaves. Secondly, the wars in Natal culminated in the emergence of the Zulu kingdom under Shaka. The Zulu were certainly not the prime movers in the process. Rather they were subjects of a small chiefdom which had for a time been under the suzerainty of the Mthethwa kingdom. During the 1810s, the Mthethwa had been in conflict with the amaNdwandwe. Shaka was able to stay out of this conflict till he had sufficient force. In a major battle in 1819 on the banks of the Mhlatuze River he defeated the amaNdwandwe. The Zulu kingdom under Shaka was the from that moment the paramount power in what is now known as KwaZulu-Natal. In the 1820s, warfare on the High Veldt, in particular, was endemic and destructive. Settlements became built for defence, in one case entirely underground in a cavern system; it is from this period that stories of cannibalism derive. Almost certainly, these are not strictly accurate, but they can be seen as metaphors for major social disorientation.

Out of this maelstrom there emerged a limited number of kingdoms, which were of a greater size than any that had preceded them. The Zulu kingdom under Dingane, Shaka's assassin and successor was probably the most powerful of these. In addition to the Zulu Kingdom also to mention the Kingdoms Mpondo, Ndebele, Tswana, Swaziland (Ngwane and Ezulwini) and Moshoeshoe (Kingdom of Lesotho). In the same period in the Limpopo Province, Sekwati could consolidate what would later be known as the Pedi kingdom in the mountain valleys of the Steelpoort River.

During 1857 the Cattle-Killing⁵ among the amaXhosa took place, this in accordance with a prophecy preached to a young girl Nongqawuse. In the process 40,000 people died of starvation. This catastrophe was used by the colonial government to force the amaXhosa⁶ into wage labour. This Cattle-Killing marks the end of the beginning of South African history. For the first time, an African society, other than the Khoikhoi, had been broken.

In 1867, on the banks of the Vaal River just above the river confluence with the Gariep, the Boers and Griquas began to find Diamonds. From then on, mining, and the industry associated with it, would always be at the centre of South African economic, and social and political life.

The mine required labour. By the mid-1870s 50,000 African men a year sought work in Kimberley. They came from every community within Southern Africa, except for the Venda and Zulu kingdoms, but by far

³ Based on a book from Robert Ross, *A Concise History of SOUTH AFRICA*, 1999

⁴ this period is also named the 'mfecane', the period of devastation that disrupted and then re-formed many black societies.

⁵ This not only meant 90% of their cattle but also the destruction of their grain.

⁶ 'Kaffir' (caffre or Kafir), once a usual description among whites and Zulu of Xhosa-speakers, but later became used as an offensive word for all blacks by Afrikaners.

the largest number were Bapedi and other Sotho-Tswana Speakers from the Transvaal, who had indeed been going south in migrant labour well before the discovery of diamonds, followed by followed by Varsonga⁷, and Basotho⁸. Equally, the demands of the diamond fields led to the major extension of South Africa's railway network. For the first time, South Africa was on the way to becoming a single economic sphere. At the same time, the first attempts were made to create a single political sphere in the region. From 1875, South African politics were dominated by the attempts, launched by the British Colonial Secretary, Lord Carnarvon, to bring about the Confederation of the various South African Colonies. This was a complete failure. In trying to push Confederation through, the British increased the level of conflict, and the degree of divisions, in the region, rather than decreasing them as was intending. This was clearest in the Transvaal. The South African Republic, although recognised by other colonial governments, in no way controlled the totality of its putative territory. On the one hand, the Transvaal burghers were increasing their claims for land, even within the heartland of the Pedi polity, buoyed up in their expectations by short-lived rush for gold⁹. They also were experiencing labour shortages, as the Africans moved away from their farms to the diamond fields. On the other hand, the Pedi polity, now under the leadership of Sekhukhune, was growing in strength. Migrant labour, long practised, was now more lucrative, and the guns that made up part of the migrants' expenditures increased Pedi military strength. In addition, the pressure of the South African Republic on a variety of communities' peripheral to the Pedi Kingdom made them turn to Sekhukhune for protection. The competition between the Republic and the Bapedi turned into war in 1876, during which the burgher army, assisted by Swazi forces, was unable to conquer the Pedi heartland and melted away, leaving the Transvaal state further in debt.

The Pedi defeat of the Republic served as an excuse for the British to pre-empt the agreement to Confederation and annex the Transvaal in 1877. There was initially no resistance, and the burghers appreciated the smashing of the Pedi polity by a combined British and Swazi force in November 1879. But, the elimination of the Pedi threat only increased the antagonism of the Transvaalers to their new rulers, by removing on of the advantages of the British presence. Nationalist dislike of British overrule could surface under the inspired leadership of Paul Kruger. The Transvaalers rose in revolt and shot to pieces the British forces sent against them. The British were not yet prepared to commit the full weight of Empire to regaining the region. Thus, in part for reasons internal to British politics and confident that they could exert sufficient pressure to ensure a degree of control when necessary, in 1881 the British recognised the resuscitated independence of the South African Republic.

Around the same period the Zulu Kingdom was overrun by the British and Transvaalers. Confederation had failed. The growing economic unity of the region had not been translated into political unity. However, during the years around 1880, the whole of what was to become South Africa was brought under colonial rule.

In the mid-1880s, the rules of the political game changed, because the economics changed radically. In those years it was discovered that gold was present in the hills of the Southern Transvaal, in virtually unlimited quantities. The opening of the mines entailed an enormous increase in the demand for labour within Southern Africa. By 1892, there were over 25,000 black workers in the Witwatersrand Gold Mines. The circumstances were appalling, the long march exhausted the workers, weather was cold during winter¹⁰ and the deadly disease of the lungs caused by rock dust, killed vast numbers of workers. The subservience of the black workers was increased by the impact of rinderpest. This cattle disease swept through South Africa in 1895-6, killing about 90 per cent of the region's cattle and big game.

Through the steady increase in demand by the British Empire in the person of Lord Milner, on the South African Republic until, finally in 1899 Kruger was faced with a choice between the dissolution of the state as it then existed and war with the British. The Transvaal, in alliance with the Orange Free State, chose War. The war that followed has been known as the South African War, as the Boer War, or to Nationalist Afrikaners as the Second War of Liberation. In 1902, after the Peace of Vereeniging, which ended the war, the British annexed the Republics, as the Transvaal and the Orange River Colonies.

The victory of Het Volk in the Transvaal elections of 1907 was in one sense a defeat for the British imperialist programme which had brought about the South African War and had informed the process of

⁷ Mainly living in what is now Mozambique

⁸ From the mountain kingdom Lesotho

⁹ In the river beds around Pilgrim's Rest

¹⁰ Johannesburg is 2000m above sea level, diseases like pneumonia and tuberculosis

reconstruction. The Union of South Africa was inaugurated on 31 March 1910, with Louis Botha as its first Prime Minister.

During the period of the First World War, the October 1929 Stock Exchange Crash and the Second World War, the black population struggled for recognition. During the bus Boycotts of Alexandra in Johannesburg and at Brakpan in the East Rand was the leadership of the protest linked to national political parties. Of which the prominent figures, Gaur Radele, a lawyer's clerk, and David Bopane, a teacher brought up in Sekhukhuneland, respectively, were from the early 1940s members of both the Communist Party of South Africa and the ANC.

On 26 May 1948, white South Africa went to the polls. The result was a victory for the National Party. The National Party was in power for a month under forty-six years. The election was won under the slogan 'apartheid'¹¹, which was to become the watchword of the government and a world-wide term of abuse among its opponents.

This 'apartheid'¹² entailed a number of changes in the political landscape and the introduction of several laws and policies by the government. Under Dr H.F. Verwoerd¹³ the much hated and cynically entitled Abolition of Passes and Documents Act¹⁴ of 1952 was introduced. This was to restrict and control the movement of Africans between part of South Africa. A other item under the Verwoerdian initiative was the promoting of what become known as Bantu education. In some ways, this entailed a degree of recognition of African participation in the political process of the country. It was symbolised by the renaming of the 'natives' as 'Bantu'. On the other hand, the programme had no regard for the actual aspirations of the mass of the country's black subjects. The idealist visionaries of apartheid realised that total segregation in the cities required the building up of putatively viable economies and political units for their African populations away from the urban centres which would now be for whites only. The zoning of the country under the Group Areas Act of 1950 between white and black meant that millions of Africans, coloureds and Indians found that their residence had been designated, usually to whites. The National Party vision of South African society thought that the population other than white belonged to groups¹⁵. Each of these groups except Indian and Coloured were considered to have their own historic homelands in which they could develop according to their own traditions.

In Sekhukhuneland, opposition to the betterment schemes, notably cattle culling, and to the imposition of Bantu authority structures was orchestrated by Sebatakgomo, an organisation of Pedi migrants in Johannesburg, many of whom were members of the ANC. Indeed one of the leaders of the movement, Flag Boshielo, had been banned as a communist. The uprising centred around attacks on those who had taken office under the Bantu authorities' scheme, and several of these were assassinated. It would be difficult to say that the ANC leadership actively planned the uprising, but contacts with the law firm which Nelson Mandela had set up with Oliver Tambo in Johannesburg, and with Walter Sisulu, who had been secretary-general of Congress until forced by government to resign in 1954, were close. In the event, though the rising was put down with considerable force by the government. Twelve men and two women were sentenced to death for their part in the assassination, although they were ultimately reprieved.

In the course of 1960, the clash between the various African nationalist groups and the government came to a head. Both the ANC and the PAC announced major campaigns against the Pass Laws. In so doing, they were driven largely by their need to compete with each other, and seriously underestimated the power and the ruthlessness of the white-run state. At Sharpeville, this resulted in the killing of sixty-nine people and 180 were wounded, by the inexperienced police constables who panicked and fired on the crowd.

The crushing of the ANC and PAC entailed, temporarily, an end to organised political resistance. Naturally enough, it did not lead to the acceptance by the mass of blacks of the institutions of apartheid. In the winter of 1976, pupils at a number of schools in Soweto¹⁶ began to demonstrate. On 16 June 1976 the police killed two youths. The photograph of Hector Petersen, aged twelve, shocked the world and became one of the icons of apartheid's brutality.

The steady collapse of the Reserves' agricultural economies turned many once lush areas, like Sekhukhuneland, into treeless near-deserts. In 1980, the rural population density in the Reserves ran from

¹¹ literally 'separateness'

¹² with its oppressive character of white 'baasskap'(domination)

¹³ Became Minister of Native Affairs in 1950

¹⁴ All Africans required to carry a 'reference book' – a pass by any other name – which noted their employment history and residence rights

¹⁵ Xhosa, Zulu, Swazi, Tsonga, Ndebele, Venda, North Sotho, South Sotho, Tswana, Indian and Coloured

¹⁶ Short for South Western Township, in Johannesburg

29 to 298 to the square kilometre. In Lebowa it was 65, in comparison with the non-reserve areas like Cape Province 2 and Transvaal 11 per square kilometre. These Homeland areas ceased to be farming areas in any reasonable sense of the word. In all the Reserves, communal grazing areas, with only distrusted chiefs to control access, deteriorated rapidly. Erosion, everywhere a danger in a country where grass cover can be thin as the torrential rains of early summer arrive, tripped much of the country of its topsoil. A simple path could quickly become the bed of a rivulet and within a few years a deep dongas¹⁷. The 'betterment' schemes¹⁸ introduced in the Reserves could not reverse this damage.

Given the hopelessness of life in the Reserves, increasing numbers of men and, particularly, women came to settle illegally in the cities of South Africa. With the demise of subsistence peasantry, survival and welfare came to depend on access to a cash income. The divisions generated by apartheid only became stronger during the 1970s and 1980s as unemployment increased sharply due to the depression of the last quarter of the twentieth century. Early Johannesburg gave plentiful opportunities for the proliferation of many economic activities, these activities created a large informal economic sector. The most notable such area was with regard the brewing and sale of beer, and of alcohol beverages in general. This proved to be a major source of income for the African women, who run these mostly illegal beer hall and shebeens¹⁹.

In retrospect, the tendencies which were to lead to the abandonment of apartheid from 1990 were already evident in the late 1970s. At the time, of course, things were not so clear, and these developments were seen as signs of hope by apartheid's opponents, or, by its supporters, as problems which had to be confronted and overcome, if they were recognised at all.

During the course of the 1980s the militarization of South Africa politics proceeded apace under the rule of P.W. Botha. This would result in classes between black and white.

The events in Sekhukhuneland in the Northern Transvaal were particularly dramatic. The area, declared part of the Lebowa Bantustan, was becoming drastically impoverished, and contained a large number of unemployed young men whose hope of finding work was greatly diminished by the decline in migrant labour in Johannesburg. It also had a long tradition of resistance, exemplified by the Sebatakgomo movement in the 1950s, and had been the short-lived focus of an MK guerilla incursion led by Gabriel 'Tokyo' Sexwale, later the premier of Gauteng²⁰. The presence of Peter Nchabaleng, a Robben Island graduate and Congress stalwart, with his sons, gave a degree of direction to the movement which emerged in a number of villages. It was aimed essentially at the Lebowa government officials, who were correctly seen as the minions of Pretoria. However, a number of accident which the Sekhukhuneland 'comrades' suffered convinced many of them that they were afflicted by witchcraft. Nchabaleng, who was to be murdered in police custody, did his best to restrain the 'youth', but without success. In a few months in early 1986, some thirty-six people were burned to death as witches in the villages of Nkwana and Appel, the kernel of the revolt. The average age of the victims was over sixty; that of their executioners, nineteen.

Two points need to be made about this shocking episode. First, alleged witches had regularly been done to death in pre-colonial times, development through the twentieth century. Indeed, there are indications that the concentration of people in the Bantustans, particularly in the Transvaal, and the consequent increase in interpersonal tensions, meant that more people were suspected of witchcraft, often with fatal result. Leading Bantustan politicians, particularly in Venda, were thought to be using sorcery for political ends. However, since the state did not recognise the reality of witchcraft, and indeed made it an offence to accuse someone of being a witch – the state was therefore seen at some times and in some places as the protector of witches, and as deriving its own power from the occult – these accusations remained simmering, and no methods were discovered for purging the whole community of the evil. Secondly, the circumstances of the mass killings in 1986, and indeed the general upsurge in witchcraft accusations, resemble those in many such outbreaks, particularly in seventeenth-century Europe and in North America., in an absence of a strong and respected structure of authority able to check the rumours at sources and prevent the movement from spreading. The long-term decline in chiefly legitimacy, especially after the chiefs had been co-opted into the Bantustan government, and the temporary break-down of political order in the summer of 1985-6 help explain the events in question. At the very least, respected village government would have ensured that the youth went through the correct procedures, consulting diviners and so forth, before killing the alleged witches. Not all the struggles even in the rural Transvaal led to such excesses.

¹⁷ a scar through the earth many feet deep

¹⁸ In principle these entailed the concentration of the population into villages, where schools and health centres could be more efficiently served, and where the surplus population could be held.

¹⁹ These parlours sold dagga, sex and illegally distilled spirits, often full of impurities and sometimes lethal.

²⁰ In Setswana 'The place of gold'

In 1989, F.W. De Klerk, became leader of the National Party and latter that year after the election he was elected as President. When Parliament reconvened on 2 February 1990 De Klerk announced that the bans on the ANC, the African South African Communist Party, the Pan-African Congress and all other proscribed organisations were to be lifted forthwith.

In addition to the remains of the struggle against state transformation, repression and apartheid which culminated in revolts in the 1950's and the 1980's, there was a discussion going on regarding the future of the chieftainship. In 1982 Kgagudi Kenneth Sekhukhune was the chief of Mhlaletse. At that moment Rhyne, who had declined to assume office in 1975, wanted his chieftainship back. Rhyne got back up from the government who wanted to get rid of K.K. since he opposed the homeland policy. Rhyne was informed that the matter was closed, but he got support from the younger men of the village who felt excluded by the old guard. The case has been to court several times and finally K.K. won in 1996. In the meantime the government tried to create discord in the area by recognising a lot of chiefs and giving them all some money. But this did not work out and the chiefs remained loyal to K.K. Finally the government has recognised K.K. Sekhukhune as paramount chief of Sekhukhuneland. After a long legal struggle with several court cases, the recognition ceremony was completed in August of 2001.

The history of South Africa between February 1990 and April 1994 was chaotic and bloody, though not as bloody as it might have been. It was not a period during which the real problems of South Africa, other than the political and constitutional, could be addressed. The core was the repeal of the Population Registration Act, in 191. No longer could people claim rights, and more importantly be deprived of them, on the basis of racial or ethnic classification.

Between 26 and 29 April 1994, 19,726,610 South Africans voted in the founding election of the new South Africa. At least, that many had their votes counted. There were no violent incidents on the polling days. On 10 May 1994, F.W. de Klerk and Thabo Mbeki were sworn in as the two vice-presidents of a united country. Then Nelson Mandela took the oath as the first president of a country in which the scars of the past were temporarily hidden, before a vast and jubilant multitude. He ended his inauguration speech with the words: 'Let freedom reign. God bless Africa'. All the same, the rain may be tainted with the past, but it is still falling. That, for most South Africans, is what matters.

3.2 South African tribal-ways²¹

As so many cultures in the Southern Africa they started out as hunter-gatherers, speaking Sotho-Tswana, which is spoken largely on the interior plateau of South Africa. Features of their culture include, first, a sharp division of labour between the sexes. Women performed the bulk of agricultural labour, as they were thought to be dangerous to cattle, and were excluded from pastoral activities, and thus implicitly from political power. Men cleared the fields of trees, it was the woman's task to prepare the soil by hoeing, to plant, to weed, to harvest and to thresh the grain. Women also collected wild food in the veldt, fetched water, gathered firewood or cow dung for cooking and prepared the thick porridge which was the staple food and the beer, and washed the utensils after meals. Potting, and in some places basketry, were also within the women's realm.

The timber or stone work for the building of houses was done by the men, and in some parts of the country they did the thatching. Women, on the other hand, plastered the houses, on the walls and floor, with cow dung, built the lower retaining walls around the homestead, and generally kept the homestead clean.

The adult men, in contrast, were primarily concerned with the livestock. Milking the cows, thickening and souring the milk into amasi, butchering animals and working the leather produced from their skins were in principle men's work. Men would also build the cattle byres, with poles and brushwood. Other male tasks included smiting, for a small, specialised group, mining, particularly for copper, and war, public affairs and politics.

The two spheres were linked to each other through the institution of bride wealth (boadi in Sesotho). This was the key institution around which the societies of the region were organised, at the level of the family.

This system was predicated, not perhaps necessarily but certainly in fact, on the subordination of women to men (and to a lesser, because impermanent, extent of young men to their elders). Women's work was physically harder, and more continuous, than that of men. Marriage was seen as the alliance between two families, and women had relatively little say in the choice of partner.

²¹ A Concise History of South Africa, R. Ross, Cambridge Press 1999

Children were brought up in such a way that the gender norms were inculcated from a very young age. From the age of about six, girls were expected to help their mother around the homestead²², Boys in contrast would at the same age be assigned the task of looking after the stock²³. When they reached puberty, both sexes underwent initiation to allow them to reach full adulthood. The girls received instructions in the skills required for being a good wife. The boys completed their training as future warriors²⁴.

Viewed from the perspective of men, the system allowed the possibility of accumulating people and, hence, power. Land was fairly freely available, and private property in land did not exist, what mattered was the acquisition of cattle and dependent. It was here that the bride wealth system had political connotations²⁵. The chiefs could follow these strategies with greater success than commoners. In material terms, chiefly power was based on the accumulation of cattle and people.

Chiefs had to foster relations because ultimately the power of an individual ruler was contingent on his performance. Not every man could become chief. In principle the office was hereditary, and even in the most turbulent times a leader had to have, or to claim, part lineal descent from the chiefly families. As the Batswana put it; Kgosi ke kgosi ka batho – a chief is a chief by the people, and thus conversely, a chief without people was no chief. People claimed their political identity from the chief to whom they were, perhaps only temporarily, subject. A successful ruler would have people of many backgrounds among his followers. This expressed the ultimately consensual nature of chief ship.

The kgotla or indaba functions as a court of law, settling disputes and punishing offenders. In addition, matters affecting the community are discussed, and chief, or ward head, pronounces his decision after having heard the speeches of his people. The ruler was thus able to gauge the opinions of his most important subjects, and to act in accordance with them. If he did not, or if matters became too fractionalised and he was unable to impose his will on the polity, he could expect secession. Nevertheless, if they functioned well, they could be powerful institutions. The main task of the ruler was to preserve the prosperity of the community. In the first place, this meant ensuring that the rain fell, a matter of crucial importance.

Major explosions of tension were a sign that matters had gone badly wrong. In general, men and women attempted to ensure their health through forms of preventative medicine, essentially ensuring that the ancestors were well disposed to the living. When this failed, it became necessary to seek help from a specialist, who would use herbal remedies and attempt to divine whether some form of pollution had disturbed the well-being of the family.

3.3 *The African Way of Management*²⁶

3.3.1 African and Western concepts of time

Time is valuable and there just isn't enough of it. Time is passing rapidly. The Western view of time is diametrically opposed to the African view. The difference in the two views of this concept alone illustrates completely different approaches and attitudes to life, humanity, and to work and business.

In general Western experience and view of time is based on a lineal concept of time. Time is infinite. The Western and somewhat futuristic view of time is reflected through expressions such as 'Let bygones be bygones' and 'Tomorrow is another day'. In other words, the past is gone, let's look to the future. This pervades every aspect of the Western psyche. Planning and forecasting for the future consumes us in all aspects of business and in our individual lives. The past is 'history' and is often thought of as boring and something we have to study. Westerners accept there is an internal locus of control and that, to a considerable degree, one can determine one's future.

The traditional African view is diametrically opposed to this. The African takes a circular view of time, in which the past is more important than the future. The African circles into the past, then the future, and back through the present to the past. There is an acceptance of an external locus of control. In other words, there are forces operating in every person's life over which he or she has absolutely no control. Traditionally, the

²² Prepare food, work the fields and fetch water and firewood.

²³ First sheep, latter cattle; under the tutelage of somewhat older boys they would learn to fight, initially with sticks.

²⁴ Those who were initiated together acquired an esprit de corps and would form a fighting unit, usually known as a regiment.

²⁵ The number of wives was dependent on the size of his cattle herd, furthermore a man with many wives could offer much hospitality thus increase respect.

²⁶ Relates to a book by M. Boon, *The African Way* (The power of interactive leadership), 1998

ancestors play an ongoing and complementary role in every aspect of life²⁷. There are, of course, perversions of other aspects of life that affect time and punctuality. This has to do with discipline, or rather the lack of it, and has nothing whatsoever to do with traditional views of time.

Credo Mutwa said about this in an interview with M. Boon:

In our African culture there is no such thing as 'African time'. But the people of today escape into laziness and blame our culture. Business was there in Africa, and it was governed by some of the ethics and laws that also govern modern business. For example, let's take a blacksmith. Let's say he promised the king he would deliver certain weapons in 12 days. All complete, sharp and ready. If the order was delivered late, the blacksmith would be fined two cows. Time and discipline were important. If the king said you had to be ready at the first moment milking, you could not arrive at midday. African respected time, and honesty in traditional business was the norm.

3.3.2 Philosophy of the Abantu people

People are life and business, and by not understanding our people, we are destined to remain in conflict.

3.3.3 Ubuntu (Zulu) or Batho (Sotho)

The heritage of the philosophy that comes to us through our traditional African roots is ubuntu/batho: morality, humanness, compassion, care, understanding and empathy. It is one of sharing and hospitality, of honesty and humility. In Africa, it draws in all of the people. In this 'family' there is a community of shared values and equality.

Ubuntu/Batho is best described through the expression: *Motho ke motho ka batho* (Sotho). This means: A person is only a person because of other people. Ubuntu/batho is not empirical. It does not exist unless there is interaction between people in a community. It manifests through the actions of people, through truly good things that people unthinkingly do for each other and for the community. It is believed the group is as important as the individual, and a person's most effective behaviour is in the group. There is also a clear community of shared values and equality as 'a person is only a person because of other people'.

To a considerable degree, a Westerner's view of life, ethics and values are based on Greco-Roman philosophy entwined with Judaic and Christian religious beliefs. The order in the universe as recorded by Aristotle and Plato continues to affect the Western approach to life. It is here that one begins to see the most significant diversion from African thought. The Western philosophy of humanism, itself emanating from the Renaissance, is based on the Greco-Roman premise of man as a rational being. It intellectualises the concept of humanity and, in so doing, makes it individual – something one can choose to follow if one accepts the rationale. African ubuntu/batho does none of this. It simply exists. It is moral and good. It is emotional and deep, and people simply act in a way they intuitively know to be right. It is not something one chooses, and it is accepted as the way life is.

The Western unitary family is one in which the individual is paramount. Individual competition is encouraged. The African environment displays the extended family ethic in which there is a super ordinate goal for the collective to aspire to. In other words, unlike the Western model which is focused on the individual the African tribal model is focused on the group. Because of the collective approach in the African tribal way, each individual has resources to innumerable support structures. A community is made up of individuals who are all independent but interdependent. It is not an amorphous mass. A powerful community is made up of powerful individuals. Ubuntu/Batho is only possible because of the individuals in the group²⁸.

3.3.4 Seriti (Sotho)

A critical base to traditional African philosophy is known as seriti. The origin of the word seriti, in its form moriti, means shade or shadow, but it is seen as the vital life-force identifying an individual. It is part of all life, but it is also personal, intimately affected by affecting other forces. 'Seriti is the energy or power that both makes us ourselves and unites us in personal interaction with others.'²⁹

²⁷ In a survey in 1995 by Group Africa in rural and urban areas, of 1637 respondents, 66% said they believed in ancestors.

²⁸ The tirelo sechaba (to work for the community) system in Botswana is such an example of ubuntu

²⁹ Schutte: Philosophy for Africa

Although there is considerable emphasis on the individual and self, this needs to be seen in relation to all other life. While seriti identifies an individual, it does not exist unless it is seen in the context of its interaction with the community of life-force.

Idlozi (the shade) and seriti/isithunzi are interchangeable. The seriti is something called an aura. We Africans believe the seriti, which after death becomes an idlozi, is shaped by the appearance and the experiences of the person of the physical being. This seriti, the little soul, is not immortal. If you neglect it, it will slowly fade away³⁰.

Seriti is directly associated with clan names and characteristics, and is made up to a significant degree by the good deeds of one's ancestors. It is this weight of generations that is enormously important in life. By making the effort to explore the individual, family and clan histories of the people who work with or for you, you are, in effect, offering a great compliment. You show that you are attempting to understand the substance of an individual and gaining a measure, through his ancestry (which is crucial in the African way), of his Seriti.

3.3.5 The warrior ethic

One of the important pillars on which society, values and leadership are formed, is the 'warrior' and the discipline, self-control and tenacity he represents. We need to consider the African warrior, his frame of reference, his values and his environment.

Africa has its warriors and the warrior ethic runs deep. It may have been smothered and hidden through the ravages of colonisation and apartheid, but it is still very much alive. For example, the Pedi warrior ethic is clearly the basis on which general leadership is established, even among very young people.

During the period immediately before initiation the young boys who will attend the session from a 'court' of their own, presided over by their leader (nKgwete) who was chosen during their fight with switches. He is assisted as advisers by some other boys who emerged markedly during the fighting³¹.

The stages of leadership development and the warrior are referred to in terms of cattle. In Africa, enormous importance is attached to cattle and the various characteristics that different animals reflect. In all cattle based societies these characteristics are used in vivid imagery to define and describe different stages in the development of a man. An ox is seen as gentle, compliant, co-operative and social. The bull is seen as aggressive, violent, assertive, competitive, anti-social and with inhliziyu embhi (an ugle hart).

In a strong community there is a fine balance between self-actualization (individual), survival (dependency on the community) and the interaction between the two (the life-force: a comfortable linking of the warrior, batho and seriti). Even though the warrior appears extremely individualistic, he is not in conflict with the community. As part of the clan, he understands the importance of family and the need to stand united. He lives batho and community. As a warrior and as part of the clan, he understand seriti and is driven to enhance his own and his family's.

3.3.6 Tribal leadership

Traditionally, the king represented the unity of the tribe and was the personification of the law. In other words, his example was expected to be exemplary. This is now the expectation of all leadership be it in business or elsewhere. Any questions or disputes about the law were settled by discussion among the old and wise elders of the tribe. The chief's councillors represented the people and it was their consensus that defined the laws.

He (the Chief) is not expected to partake in the discussion of the case, but merely judges when it has been sufficiently discussed and when a majority opinion becomes apparent, at which stage he 'cuts' the case and gives his verdict accordingly³².

It is important to point out that it was accepted that there was a collective responsibility to uphold the law. Taking cognizance of the attitude towards community and collective responsibility meant that anyone present at a case could question the involved parties. Such a court was called inkundla. The only person excluded here was the presiding headman as his role was to ensure order and procedure was maintained, to sum up, and to pass final judgement.

All adult men are entitled to attend the court of the chief and although attendance is not compulsory, it is expected that men attend these hearings as often as possible. All men in attendance are allowed to partake

³⁰ Credo Mutwa

³¹ HO Mönning, The Pedi

³² HO Mönning, The Pedi

in the deliberations, although the elders do not regard with favour young men of little experience or knowledge of the law who address the court, and will silence them unless they are involved in the case³³.

3.3.7 Interactive Leadership

The trust of interactive leadership is to develop each individual by demanding accountability, and leadership of himself, his peers and his own leaders. Because of the drive towards community, people can easily become confused about who actually leads an organisation or dimensions of it. This needs to be clarified. Values are no particular individual's domain. They are created by the group, and it is the group that becomes accountable for living the values: to ensure they are upheld or to discipline when they are not. The leader is expected to be exemplary, to lead strongly and effectively, but always with the values as a guide.

Purely professional functions are largely the domain of a normal hierarchical leadership structure. After all, it is the leader/manager who conducts individual performance appraisals and decides on financial rewards – not the group. However, there are very few purely professional issues that do not relate to a value and therefore, to the group.

Because of the environment of trust, openness and respect – all of which are created in the interactive leadership process – the leader will have tremendously enhanced power. He will be able to lead strongly and professionally, and demand extremely high standards without ever encountering resistance from the people. The reason for this is simple to understand. In the process of interactive leadership, one works hard at breaking down barriers between people and between classes. This is physically reflected in umhlanganos where each person, regardless of rank, has the same opportunity to contribute their opinion, and to encourage or even stimulate discipline of an individual or the group.

Other realities unfold in the umhlanganos. To lead in a strong community, where challenge is encouraged, where there are no holy cows, leaders have to be dynamic and strong. Above all, they have to be good people. Without strong seriti, they will not be leaders for long. They will try to revert to autocratic to maintain authority but the people will not allow it. Only the power, the seriti, that comes from within a leader will enable that leader to lead.

In the umhlangano – like everyone else – the leader is exposed. If, through exposure or lack of it, he does not measure up to the leadership needs of the people, and if he does not retain their respect when vulnerable, he will be unable to lead them professionally. If, however, he retains their respect through that vulnerability, his seriti grows and his professional leadership will produce no conflict. The people will trust him and his judgement.

In other words, there are two superimposed structures which are at work constantly, and there is a dynamic tension between them. One is a classic hierarchical leadership structure and the other is a community structure. People belong to both structures simultaneously. Values are the firm base for both structures. They can be placed on a continuum with corresponding accountability which will be intuitively recognised by all.

³³ HO Mönning, The Pedi

Appendix 4 Labour Intensive Construction Methods

4.1 Labour Intensive Construction Definition

The various literature used an array of terms describing in principle all the similar method. To keep this research in accordance with the term ‘sympology’ this research will describe the following term based on the definition used by the Research Centre WORK and written down by Prof. R.T. McCutcheon with additional remarks made.

4.1.1 Research Centre WORK

Prof. R.T. McCutcheon defines labour-intensive construction as:

“The economically efficient employment of as great a proportion of labour as is technically feasible, to produce a civil engineering object of as high as quality as demanded by the specification and allowed by the funding available result in a significant increase in employment per unit of expenditure.”

‘Labour-intensive’ is a phrase in economics to describe an operation in which proportionately more labour is used than other factors of production. Labour-intensive construction is the effective substitution of labour for equipment, where technically feasible and economically efficient, and results in a significant increase in employment opportunities per unit of expenditure. However, it is not a matter of either labour or machines. If it is not technically feasible or economically efficient to use labour for a certain activity³⁴, machines should be used. The principle is to create jobs, especially for unskilled persons. The skills that will be learnt by the people can be used in other projects or in the maintenance of the same project. It is important to note that proper employment-intensive construction does *not* mean lowering of quality or construction standards. ‘Employment-intensive’ is also *not* the use of large numbers of people on relatively unplanned emergency or relief projects to construct something of ill-defined quality and value.

In line with its definition the concept of employment-intensive construction has two main objectives:

The creation of technically sound and economically efficient products; while significantly increasing the amount of employment created per unit of expenditure.

Thus employment-intensive construction should not only be considered as a means to create short-term employment, but as a means to promote and enhance long term development by optimally using locally available resources.

4.1.2 University Twente

Course: Employment-Based Civil Engineering

The University Twente Course uses the following definition for employment-based engineering programme:

“As far as it is technically and economically effective, making use as much as possible of the resource labour in a civil engineering project, if this results in a civil object that meets the prior to the execution of the project specified quality standards, realised without exceeding the available budget, and the use of labour contributes to the sustainable development of the region in which the project is executed.”

This technically effective means the use of labour for the execution of the project is based on a decision process that has been followed during the design phase.

Economically effective means that the use of labour for a part of the project is less expensive than the use of alternative resources.

Any civil object has to fulfil the specified quality standards. Objects that are realised by employment-based methods are no exception to this rule. Quality standards do not distinguish projects executed by

³⁴ Also known under the name Choice of Technique Analysis (COTA)

employment-based or equipment-based methods. Therefore in the definition it is stated that the quality standards are to be specified previous to the start of the project.

Employment-based projects aim at more than the short-term creation of employment. The long-term objective of these projects should be a sustainable development of technical knowledge of the local people, the promotion of the use and production of local tools and the use of locally available natural resources. All these elements contribute to the sustainable development of a region where an Employment-Based Civil programme is executed.

4.1.3 International Labour Office (ILO)

The ILO defines labour-intensive as: the optimum, not: maximum, use of the resource labour for the execution of a civil engineering project. Whenever the use of labour-based methods does not result in the required quality, or is not cost-effective, it is assumed that a project is executed by using a mix of labour and equipment, if possible supported by animals³⁵.

The different definitions used by the ILO are meant to distinguish:

- The temporary use of labour-intensive methods to create short term employment and income (also described as labour-extensive).
- The creation of systems, procedures and capacity for sustainable employment generation, by using methods based on local resources.

The first category appear to use labour in an extensive manner: large amounts of labour are not necessary put to use in an effective manner. This kind of projects is seen often in countries such as Bangladesh, India and Indonesia, which have a culture dominated traditionally by labour. Priority is given, often because of political motives, to the short-term goal of income generation for special target groups over the long-term goals of better use of local resources and sustainable employment.

Labour-based methods have many benefits:

- Labour-based methods provide a cost-effective alternative to equipment-based methods for both road rehabilitation and maintenance;
- Labour-based methods generate temporary employment for both men and women;
- Labour-based methods save foreign exchange;
- Labour-based methods inject cash into the local economy;
- Labour-based methods facilitate the use of labour-based maintenance³⁶;
- Labour-based methods transfer knowledge to local communities³⁷;
- Labour-based methods have environmental advantages³⁸;
- Labour-based methods require less manoeuvring space³⁹;
- Labour-based methods encourage the development of local industry⁴⁰.

Earlier studies concluded that labour-based methods are a cost-effective alternative to equipment-based methods in low-wage countries that have an adequate supply of underemployed labour that is motivated, can be supervised, and is equipped with appropriate tools. Yet in many of the developing countries that meet these conditions, labour-based methods have not been applied on a large scale.

³⁵ These cases are defined by the ILO as labour-based/(light) equipment supported methods.

³⁶ for example, it is much easier to maintain a hand-dug trapezoidal ditch by hand than to maintain a grader-dug V-ditch by hand

³⁷ Knowledge that will be useful for later maintenance.

³⁸ Labour-based works use less fuel, emit less exhaust, raise less dust, and are less damage the terrain bordering a construction site.

³⁹ especially when doing hill cuts and excavation work

⁴⁰ For manufacturing hand tools and light road construction equipment.

4.2 *Labour Intensive Construction Items*

4.2.1 **Training in Labour Intensive Construction**

4.2.1.1 *International Labour Office Experience*

Employing labour-based methods haphazardly will not make them competitive with equipment-based methods. The productivity rates for labour-based methods have been found to vary by as much as 1,300 percent, ostensibly for identical activities and site conditions⁴¹. This variation is primarily caused by differences in organization and management, such as the use of incentive schemes, and in the design and quality of hand tools and complementary light equipment. In one study, better supervision was associated with substantial increases in labour productivity⁴². There is a great deal of literature on training site supervisors and contractors, much of which is available through the ILO.

Programme designers often make training subcomponents for the private sector supply-driven, even though the striking success stories of firm growth have tended to be demand-driven⁴³. In a supply-driven program, trainers typically provide firms with standardized training, technical assistance, and credit. Success is measured by the number of firms trained and the amount of credit disbursed. In a demand-driven program, the first issue tackled is providing firms with a market, which is then followed by technical help, fashioned around the needs of small firms and, possibly finance. Unlike a supply-driven program, success is measured by the quantity and quality of works executed by the trained firms.

In general view it is stated that a training program has to be a primary part of any labour intensive program in a rural environment. These training schemes are part of the programmes to ensure the quality, with the particular sustainability possibilities available if one decides to extend these programmes. These training schemes focus more on education to sustain small-contractors which can be used in the programme. Through these small-contractors these programmes are able to employ the local communities⁴⁴.

4.2.1.2 *South Africa History*

As a building block for civil engineering productivity is not merely a question of motivation but also of education. Apartheid destroyed the old system of mission education⁴⁵, and replaced it with the Bantu-Homeland educational system. In the place of the liberal paternalism of the mission schools, the apartheid government provided a mass education of a quality that was nearly useless to the modern world⁴⁶. The basic statistics are clear. Most African children went to school for a while, but over half left after at most four years of schooling, when they were still, at best, semi-literate. School classes were vast, with a teacher: pupil ratio in primary schools of one to forty-four in 1988. The teachers themselves were ill-trained; only just over half had the minimum necessary educational qualification. Often, moreover, they were working a double shift so as to accommodate the maximum number of pupils, albeit at a minimum level. This was not the way to create a dynamic labour force.

At the same time, independence of mind could not be eliminated. A generation of children spent their youths challenging the political system under the slogan 'Liberation Now! Education Later!'

As stated in the introduction, South Africa levels of unemployment are extremely high. The need for housing and physical infrastructure in rural areas is high. To add to this the capacity at individual, community and institutional levels is extremely low⁴⁷. During the past few years different organisations and institutions within South Africa have recognised the potential of labour intensive construction and

⁴¹ World Bank 1978b.

⁴² Scott Wilson Kirkpatrick 1991.

⁴³ Tendler and Amorim 1996.

⁴⁴ Lesotho. 1980s till now.

⁴⁵ It provided a high level of education for tiny elite but also attained something approaching mass literacy in a few select areas.

⁴⁶ Of the 200,000 African children who entered school in 1950, 362 (less than two per thousand) passed matriculation, the qualification for university entrance, twelve years later. Even by the 1990s there were scarcely more than 200 Africans a year who passed mathematics at matriculation level.

⁴⁷ Sekhukhune Development Programme, 2002

maintenance. To achieve this trained people are required to provide the necessary technical, administrative and organisational skills to enable the construction of technically sound cost-efficient products⁴⁸.

4.2.1.3 *Sekhukhuneland Development Programme (SDP)*

During the first project⁴⁹ of the Sekhukhuneland Development Programme it was already concluded that training was not a request but a absolute need to ensure a success on the longer term⁵⁰. When the second project⁵¹ started, a similar conclusion was reached as in the evaluation report of the first project: There was a need for a thought through training programme to enable a successful implementation of the programme. This 'team leader training course', as the course was called, was started in 2001, and resulted in 12 trained and qualified team leaders by September 2001.

In an evaluation report done by WORK in 2002⁵², it was still said that the level of education of the local people was below standard. What can be observed is that in rural communities like Mhlaletse the 'top level' of the community will look for work in the cities and only the 'lower level' people will stay behind, these are then encountered by the programme officials and from this group team leaders need to be selected and trained. This requires a training programme which has as primary purpose to educate the people in; English, Mathematics, Technical skills and Life skills⁵³. This will take several of efforts like time, resources, skill and most of all patience to be fully understood by the trainees. It has been written by Prof. R.T. McCutcheon⁵⁴ that this is a problem and will need to be addressed by all programmes if they want to be successful in reaching there objectives.

4.2.2 **Community Participation**⁵⁵

4.2.2.1 *Introduction*

Community participation is essential to ensure the success of a programme. To ensure this success community participation needs careful attention during the lifecycles of a programme and projects. An efficacious involvement of the community can be complex and will require a several of resources and efforts like; thought, time, persistence, skill and diplomacy. There will be various degrees of community participation required and achieved in regards of the technical requirements, social cohesiveness of the community⁵⁶ and the personalities involved.

To ensure more efficient community participation a local development committee should already exist⁵⁷. The manager needs to understand the reasons for a number of items⁵⁸. It is only with such an understanding that, during the early stages of the programme and projects, the manager will be able to be involved in the process of interaction with the local community institution⁵⁹. Later on in the programme or project other people must participate in such a way that they are never distracted from their prime focus: the site. Which ever way the programme or project develops, proper community participation and communication with the development committee will be of crucial importance to the success of the programme.

The manager's main interaction with the local community will be in connection with the selection of candidates for training and with the main outlines of the programme and projects. It also has to be clear to the manager what role the local community entails in the area. There are several dimensions to such participation⁶⁰. One of the best ways of ensuring the manager's proper understanding of the community's

⁴⁸ Development Bank South Africa, 1996

⁴⁹ Under auspices of the Research Centre WORK, 1999

⁵⁰ Report Sekhukhuneland Development Project 1999

⁵¹ In 2000, this was consult because of problems with the team leaders and supervision.

⁵² Research Centre WORK, Analysis of the training of the Mhlaletse Youth Service Programme, 2002

⁵³ Mhlaletse Youth Service Programme, 2002

⁵⁴ Prof. R.T. McCutcheon has been involved in the programme from the start.

⁵⁵ Based on Construction and Development series, number 14; DBSA, 1996

⁵⁶ Or usually the lack of this item

⁵⁷ This is preferred if this is not the case a development committee should be established.

⁵⁸ Such as Local institutions, the principles of labour-intensive construction and maintenance, the scale of work elsewhere in Africa, and the broad strategy whereby the programme will create a local capacity, to upgrade and maintain rural roads.

⁵⁹ This has to be thought through with the possibility of replacing this person with the 'community liaison' in a latter stage.

⁶⁰ Not least the many competing interest from the community

role is to involve the manager in the full cycle of meetings early in the programme and projects this has to be done with consideration of replacements latter by the community liaison.

4.2.2.2 *The Type of Interaction*

Preliminary discussions

To reach a common understanding the following components need to be included:

- (i) the purpose of the programme: roads, jobs, development of specific skills and fostering of institutional capacities;
- (ii) the role and function of the community, in particular the Committee, throughout;
- (iii) the role and function of the local and regional authorities;
- (iv) the role and function of the programme and its training component;
- (v) the standard of the constructions;
- (vi) upgrading, construction, maintenance and emergency maintenance;
- (vii) who will pay and how much;
- (viii) the method of construction;
- (ix) wage rates;
- (x) conditions of employment; and women are as eligible as men for employment as labourers, clerks, road builders and multi-site supervisors; usually a particular effort must be made to inform women that they can take full part.

To repeat; it will take time, effort and skill for all these components to be fully understood by the community. It can be expected that the discussions will range over various issues and will take place over several months.

Reaching a common understanding on Critical Issues

During the first discussion the Committee will probably state that it wants to have certain upgraded or constructed.

During the second discussion most of the question and answers will raised again by the community. But the Committee will start to see things in perspective.

By the third and fourth discussion the Committee and the Programme Official can begin discussing the proposed programme from points of view that are not too different from one another. The order of magnitude of the proposed operations will be not too dissimilar.

Selection of candidates for training as road builders

The Committee will have to be provided with guidelines for the selection of candidates for training. The main criteria for pre-selection would be

- a minimum level of education: reading, writing and arithmetic
- expressed willingness to be a road builder
- preparedness to be trained
- evidence of "community spirit" and
- evidence of leadership qualities

The Committee would carry out the pre-selection of candidates. When completed, the Committee would inform the programme official, and the training officer would arrange to visit in order to examine the candidates and select trainees.

4.2.2.3 *Role and function of Main Participants*

Community participation will be required for successful planning and implementation. The series of discussions will lead to clarity upon the manifold issues outlined above. It is considered worthwhile summarising the role and function of the main participants.

Community: Roads Development Committee

- To establish a development committee of one is not in existence; roads to be part of its responsibilities;

- To understand the purpose of the programme
- To establish priorities for construction;
- To motivate the need to local authority;
- To understand the road building process: standards, methods, cost, wage rates, conditions of employment, eligibility of women to take full part;
- To select potential candidates for training; and
- To liaise with the programme and local authority.

Programme: Programme Officer

- to be responsibility for the successful implementation of the road construction and maintenance programme: to ensure the provision of human and material resources and regular payments; to manage site supervisors and road builders in order to achieve the required standard of road; and
- to engage with the community in the planning and implementation process, including: delineation of overall objectives of the programme; definition of employment (particularly that payment will be related to production-task work) construction and maintenance, standards, methods, conditions of employment of women; training; selection of trainees; reporting and monitoring of progress; resolution of programme related difficulties

Local authority

- To ensure that the priorities for road construction and maintenance are sensible allocated
- To motivate these priorities to regional and national level
- To ensure the regular flow of funding (at regional level) and money at local level (often including the allocation of necessary transport); to ensure regular pay cycles (this requires that proper procedures are understood and followed); and
- In addition to its local concerns, to understand the overall objectives of the programme and be aware of the necessity to relate to the regional and national planning process for the smooth running of the programme.

The two aspects of labour-intensive road construction always considered to be most advantageous are those of improving rural roads as well as providing employment. However, a further advantage, often forgotten, is the effect that these programmes have in fostering within communities the need to develop the third tier of administration. Labour-intensive road construction requires the cultivation of organisational and administrative capacities. It also develops the ability to provide services in areas where previously they have not existed as there has been neither the means nor the expertise. Small local authorities can now make a very important contribution to road maintenance, where this was previously seen as only within the realms of skilled engineers and government with expensive equipment⁶¹.

4.2.3 Tasking in Labour Intensive Construction

All civil engineering projects rely on the productivity of their equipment and workers to achieve good results. Major capital works projects with a high element of equipment can estimate with some accuracy how much and what kind of equipment will be required for the type of work envisaged. Estimating manuals such as the Caterpillar Performance Handbook provide work outputs for most common equipment types⁶², and these figures form the basis of all cost and time estimates. Individual labour productivity, while important to ensure equipment is utilised effectively, will have a minor impact on overall costs and timing. Labour-based projects however are almost entirely dependent on the productivity of labour. Provided the workers are properly organised and supplied with the correct hand tools, they will be able to carry out most of the activities usually done by earthmoving machinery. However, it is essential to have realistic estimates of expected labour productivity in order to plan and carry out labour-based work effectively.

The critical figure is the productivity norm. Workers are commonly set tasks in labour-based works that equal these norms. If the task is underestimated by 30 per cent, *i.e.* 2m³ a day for excavation rather than 3m³ in the example above, the direct cost of the project will increase by 30 per cent.

⁶¹ Stewart, 1993

⁶² Based on the assumption that they are properly utilised

Conversely, if the tasks are overestimated, then much of the workforce will not be able to meet its targets and there will be considerable disruption and discontent on site.

Estimating the correct productivity is probably the most important for the manager. If the physical quantities are wrongly estimated this can be corrected on re-measurement. Even this synthesis will have its limitations, and it is important to appreciate that these are productivities that can be expected under ideal circumstances. That is, the workforce is well organised and supervised, understands the work it is supposed to do, and has the correct hand tools in good condition⁶³. It is also assumed that the worker is healthy, properly paid, working normal hours, and has good access to food and water.

4.2.3.1 *Typical Activities*

All construction work can be broken down into self-contained activities that can be achieved by an individual or a group of workers if they are equipped with the correct tools. The permutations are many and can of course be specified in the most convenient way for the work in hand. However, to allow meaningful comparison between projects and programmes, some standards have emerged which have been found to have good universal application.

Activities are often combined into one global activity. A good example of this is the operation of taking material from a borrow pit to form a nearby embankment. In large projects in Asia this would commonly be described as one activity: excavate, load, haul, unload, and spreading (ELHUS)⁶⁴. However, in Africa this would be set as three discreet tasks, excavating to a stockpile (E), loading into a wheel barrow (L), and hauling to the embankment (H) for unloading (U) and for spreading (S).

4.2.3.2 *Task Work*

Task work evolved on projects where the workers were subject to government regulations, which meant they could not be paid more than the prevailing government wage for a day's work. Some other incentive had to be provided. Setting a realistic task, or amount of work to be completed for the day, meant that workers could work as hard as they wanted and then go home to do other things. Tasks are generally set to be achievable in 70 per cent of the working day⁶⁵, but are often completed in 50 per cent of the working day⁶⁶. This approach has proved very successful in practice, often doubling the amount of work achieved in a day; and by inference doubling the productivity of the individual worker, as well as halving the costs⁶⁷.

4.2.3.3 *Group Task*

A variation of the individual task is the **group task**, where work is set for groups of people rather than for individuals. This is done where the nature of the work requires the cooperation of a team, such as excavating and loading material into trucks or trailers. There is no basic difference in the concept. The most common mistake is to confuse task work with piecework, by setting more than one task in a day. There is no problem with setting work norms based around the recommended daily task, and then paying for more work on a *pro rata* basis. However, the project must then be set up to accurately measure the amount of work completed, with the agreement of the worker. In this case the procedure should be clearly recognised and termed as piecework. It is recommended that if piecework is adopted there should be a clearly recognised minimum daily wage that should be paid if for some justifiable reason the worker's output is low (*i.e.* the task was too hard). It should never be necessary to work more than eight hours in a day to achieve a basic daily wage.

⁶³ Poor tools and poor organisation can easily halve the workers' out put

⁶⁴ Used during lectures at University of the Witwatersrand, by Prof. R.T. McCutcheon

⁶⁵ A working day being assumed as a period of eight hours

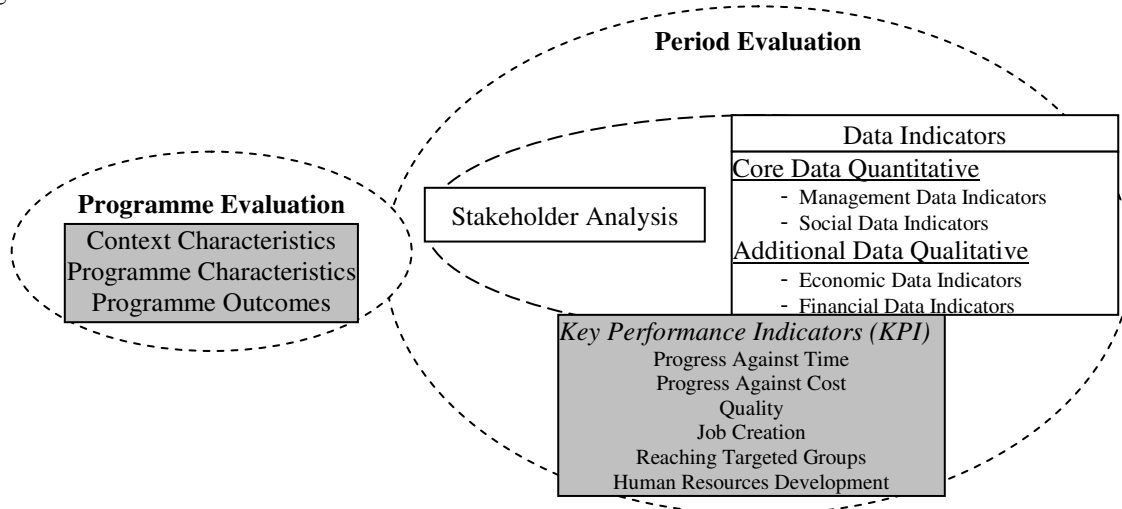
⁶⁶ *i.e.* in four hours

⁶⁷ Expanding Labour-based Methods for Roads Work in Africa, World Bank 1996

Appendix 5 Evaluation Model

5.1 Model

Figure 1: Evaluation Model



This model is split into two Parts.

- The Programme Evaluation
See for further information Appendix Programme Evaluation
- The Project Evaluation
See for further information Appendix Period Evaluation

5.2 Programme Management

5.2.1 Programmes

A programme is a framework for grouping existing projects or defining new projects, and for focusing all the activities required to achieve a set of major benefits. Programmes differ from projects in that they do not necessarily have a single, clearly defined deliverable, or a finite time horizon. Of particular importance are three features of programmes which:

- create benefits through better organisation of projects and their activities; in themselves they do not deliver the projects' objectives;
- evolve in response to the business' needs in an uncertain competitive, political and technological environment, in a way straddling the vague and changing, and the fixed and tangible;
- take a wider view to ensure that the overall business benefits from projects' activities, not just the project client or sponsor.

Programmes create value by improving on the management of projects in isolation, especially where the working environment is made up of a myriad of small projects and where project integration in terms of both development and deliverables is crucial to competitive success. The advantages cited by organisations using programmes that include:

- greater visibility of projects to senior management and more comprehensive reporting of progress, while project reporting systems focus on performance against plan or specific objectives, programme reporting can better address strategic performance by tracking progress relative to competitors;
- better prioritisation of projects; each project's role within the organisation's overall development is specifically identified and managed, and resources can be more easily re-allocated to critical projects even after funds have been assigned to individual projects;
- more efficient and appropriate use of resources; dedicated to ring-fenced resources, which tend to be more productive, can become cost-effective within a programme context;

- projects driven by business needs; project and line managers' personal agendas, such as the desire to apply the latest technology, utilise existing staff or fulfil personal research interest can be kept in check;
- better planning and co-ordination; incidence of work backlogs and duplication of core functionality and components can be reduced;
- explicit recognition and understanding of dependencies; re-engineering due to inadequate interface management with existing systems and other projects can be minimised.

Table B: Comparison Programme and Projects

Comparison of programmes and projects	
Programme	Project
An organising framework May have an indefinite time horizon Evolves in line with business needs May involve the management of multiple, related deliveries Focused on meeting strategic or extra-project objectives Programme manager facilitates the interaction of numerous managers	A process for delivering a specific outcome Will have a fixed duration Has set objectives Involves the management of single delivery Focused on delivery of an asset or change Project manager has single point responsibility for project's success

The programme client or sponsor acts as agent for the business as a whole in determining the strategic requirements for the programme and assumes responsibility for achieving the benefits from the investment. The programme manager has overall responsibility for realising the anticipated benefits from the programme.

The units of implementation within a programme remains a project, within which are a linked set of work packages. A project manager, who represents the single point of integrative responsibility for project and defines, monitors and controls the contributions of the various resources and work package managers, manages this work unit.

5.2.2 Programme configurations

As might be deduced from the range and diversity of the advantages claimed for programmes, the variations between programmes are quite significant.

5.2.2.1 Goal-oriented

Goal-oriented programmes are those which enable the management of initiatives or developments outside the existing infrastructure or routine. Goal-oriented programmes can be used as a means of translating usually vague, incomplete and evolving business strategies into tangible actions and new developments. As such, the resulting projects can operate or impinge on a number of core systems and procedures. Goal-oriented programmes can also be used as a means of effecting major, typically one-off, changes where neither the exact implementation process nor a where neither the exact implementation process nor a definitive final outcome is known in advance. Research into, and subsequent development of, commercial applications from a new technology are frequently undertaken via goal-oriented programmes.

In summary, goal-oriented programmes provide a means of dealing effectively with situations where uncertainty prevails and learning is a prerequisite to making progress. The programme framework enables work already identified to be scoped into small, short duration projects and managed accordingly, while at the same time allowing new projects to be specified as requirements emerge within a supportive development environment.

Table C: Programme configurations

Comparison of programme configurations	
	Goal-oriented
Programme's control of project Programme organisation Planning horizon Programme relationship with 'line'	Definition and direction of all project activity within programme Programme acts as client organisation for projects Achievement of programme goal Draws resource from line management

5.2.3 Programme phases

Analysis of programme working reveals that the processes involved in programme management can be grouped into five relatively discrete phases:

- Initiation
- Definition and Planning
- Projects Delivery
- Renewal
- Dissolution

5.2.3.1 Programme initiation

Programme initiation is about determining the need for a new programme and the benefits that are expected to result from its creation. The process of initiation is triggered by new client or business requirements, or by a comprehensive review of programmes.

5.2.3.2 Programme definition and planning

Programme definition and planning is about determining how the programme can add value. The definition and planning process follows either initiation or whenever the programme is renewed.

5.2.3.3 Projects delivery

Completed projects represent units of delivery for programmes. The performance of each project against its time cost and specification objectives is a measure of the effectiveness of the programme. During the projects delivery phase the programme team monitors the progress of projects. In parallel, senior management evaluates the benefits emanating from the programme structure and determines what changes are warranted.

5.2.3.4 Programme renewal

Programme renewal is about confirming the continued business requirements to be addressed by the programme as currently conceived, in the light of additional work, projects or business requirements.

5.2.3.5 Programme dissolution

If the rationale for the programme's existence no longer holds, or greater benefit could be achieved from a new grouping of projects or reviewed strategic focus for the project, then the programme is dissolved.

Table D: Programme Phases and Issues

Programme phases and issues		
Phase	Issues	Key factors
Initiation	Will the business benefit from the requirement delivery or projects with a programme framework?	New client or business requirements Changes in strategic direction Programme rational
Planning/definition	How should the programme seek to achieve the business benefit?	Nature of work/projects Projects' performance
Delivery	Are the projects delivering against their objectives?	Management of inter-project and inter-programme relationships Resource efficiency
Renewal	Is the programme realising the anticipated benefits? Should the programme continue?	New client or business requirements Changes to the business model Opportunities for realignment of projects Business processes and interdependencies (as reflected in programme arrangements)
Dissolution	How should the remaining work or projects be reallocated	

5.2.4 The principles of programme design and institutional development⁶⁸

The training programmes were extremely important. The content of the training programmes was developed carefully with great attention to detail. Different courses were provided for different levels: road builders, supervisors, and maintenance workers. Of equal importance, the training programmes inculcated a “corporate culture” into their trainees. Ultimately most trainees will end up being in charge of small groups of people, without close supervision of their own day-to-day behaviour. Under such circumstances correct “character” is as important as technical competence. Furthermore, because of its links between expert skills (the trainers) and grassroots activity (construction in a community environment), the training programmes became engines of development. (Another engine was provided by the national engineer and planning component.)

Altogether the training programme has to be seen as a vital and integral part of success. The setting up, implementation and control of an effective national labour-intensive improvement and maintenance programme of necessity require detailed attention to a number of issues. Given the range and depth of experience in southern and eastern Africa there is no need to “reinvent the wheel”. No matter how well thought out, a new approach would still need to go through several long cycles of trial and error to reach the stage where it could provide the basis for a national programme. Although there will undoubtedly be local variations in South Africa, it would be sensible to develop a programme along lines tried and tested elsewhere in sub-Saharan Africa. It should not be necessary to carry out a great deal of new experimentation particularly with regard to physical construction. In fact, the variables are more likely to be greater in relation to the institutional framework. The most pressing problem in the short term, therefore, is how to tie together the training programme with the most suitable institutional framework.

Thus, in order to weigh the various issues indicated above, it has been recommended elsewhere that the initial stages of a long-term programme of work should consist of four phases. Then the phases comprise to point form.

5.2.4.1 Phase One

Phase One would comprise a broad evaluation of the institutional, organisational, technical and policy issues related to long-term national or regional programme of road construction and maintenance based on the use of labour-intensive methods. Concomitantly, education and orientation will be essential at national, regional and local levels. A long-term plan regarding funding human resources (labourers, staff, trainers and private contractors) and production (construction and maintenance), should be produced. In addition, national or regional field studies should be carried out to provide the necessary information to enable smooth progress from a training programme to a national or regional programme.

1. Broad evaluation of policies, institution, organisation and programme.
2. Education and agreement at national, regional and local levels as to:
 - (a) concepts and objectives: asset creation plus significant additional employment opportunities per unit of expenditure, plus capacity building (individual and institutional);
 - (b) nature of long-term ‘programmes’;
 - (c) agreement that labour-intensive public works programme are not emergency or drought relief projects; and
 - (d) conditions of employment, wages and the linking of payment to production.
3. The briefing of local and national authorities as to the type, standard, funding and method of construction; the importance of the training, local and national institutions, and long-term political and financial commitment.
4. Draft long-term programme, including training.

5.2.4.2 Phase Two

In Phase Two detailed analyses of institution and organisation would be carried out. Technical and administrative issues would be delineated, which would result in the production of draft technical and administrative manuals to be used later in the training programme. The technical manual would deal with the necessary standards to be achieved and the modes of operation. The administrative manual would be

⁶⁸ Based on the DBSA training road builders manual, 1996

prepared in anticipation of reporting system appropriate for work carried out on a local basis that is able to be monitored at a national or regional level. It would also be necessary (i) to address the question of senior staffing, and the initial training of road builders and clerical staff, and (ii) to prepare a budget and a work programme.

1. Analyses: institution (local and national); organisation; levels of funding; specific technical analyses (standards, specifications); criteria for staff recruitment; identification of initial communities and training sites; delineation of the critical road network.
2. Preparatory work: design, specification, documentation; administrative, technical and training manuals; selection of trainees; briefing of communities; priorities
3. Revise forward plans.

5.2.4.3 *Phase Three*

Road construction and maintenance would start in Phase Three with a training programme that would be initiated in accordance with the results of Phase one and two. As the first stage of a national or regional action, the training programme should concentrate as much on the training of high-calibre personnel as on the construction of lengths of road. During this phase it is necessary to revise forward planning in the light of knowledge gained during the first year of the training programme.

1. Orientation and training of trainers.
2. Start pilot projects and embryonic training programmes
3. Revise training and implementation programmes
4. Revise manuals and reporting systems prior to the initiation of large-scale programmes

5.2.4.4 *Phase Four*

Phase Four would expand the work into a national programme, but only at the rate at which trained personnel become available; complemented by the institutional capacity to make use of the trained personnel.

1. Expand initial training programmes within each sector into a large-scale programme. The expansion should only be allowed to proceed in the following manner:
 - (a) At the rate which the training programme can produce skilled site supervisors and managers (training must pay as much attention to character as to technical competence);
 - (b) to the degree to which local communities have the capacity to absorb the trained personnel;
 - (c) to the degree to which the national institution is able to absorb the trained management personnel and maintain its overall planning, co-ordinating, monitoring and evaluation role.
2. Through the “programme” approach (as opposed to “project” approach) the institution is established together with the human resources required to implement the work from site level through to the planning and co-ordination of large-scale programmes.

5.3 *Project Management Body of Knowledge*⁶⁹

5.3.1 **Introduction**

Project management is an emerging profession. The primary purpose of this paragraph is to identify and describe that subset of the Project Management Body of Knowledge (PMBOK) that is generally accepted. Generally accepted means that the knowledge and practices described are applicable to most projects most of the time, and that there is widespread consensus about their value and usefulness.

5.3.1.1 *Project*

Organizations perform work. Work generally involves either operations or projects, although the two may overlap. Operations and projects share many characteristics such as:

- Performed by people
- Constrained by limited resources
- Planned, executed, and controlled

⁶⁹ Based upon A guide to the Project Management Body of Knowledge, 2000

Projects are often implemented as a means of achieving an organization's strategic plan. Operations and project differ primarily in that operations are ongoing and repetitive while projects are temporary and unique. A project can thus be defined in terms of its distinctive characteristics - a project is a temporary endeavour undertaken to create a unique product or service. Temporary means that every project has a definite beginning and a definite end. Unique means that the product or service is different in some distinguishing way from all other products or services.

Projects are undertaken at all levels of the organisation. Projects are critical to the realisation of the performing organisation's business strategy because projects are a means by which strategy is implemented.

5.3.1.2 *Project management*

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management is accomplished through the use of the processes such as: initiating, planning, executing, controlling and closing. The project team manages the work of the projects, and the work typically involves:

- Competing demands for: scope, time cost risk and quality.
- Stakeholders with differing needs and expectations.
- Identified requirements.

It is important to note that many of the processes within project management are iterative in nature. This is in part due to the existence of and the necessity for progressive elaboration in a project throughout the project life cycle; i.e., the more you know about your project, the better you are able to manage it.

The term project management is sometimes used to describe an organisational approach to the management of ongoing operations. This approach, more properly called management by projects, treats many aspects of ongoing operations as projects to apply project management techniques to them. Although an understanding of project management is critical to an organisation that is managing by projects.

5.3.1.3 *Project Processes*

Projects are composed of processes. A process is a series of actions bringing about a result. Project processes are performed by people and generally fall into one of two major categories
Project management processes describe, organize, and complete the work of the project.

Product - oriented processes specify and create the project's product

Project management processes and product/oriented processes overlap and interact throughout the project. For example, scope of the project cannot be defined in the absence of some basic understanding of how to create the product.

5.3.2 **Project Management Knowledge Areas⁷⁰:**

Project Management consist of the following management areas:

5.3.2.1 *Project Integration Management*

A subset of project management that includes the processes required to ensure that the various elements of the project are properly coordinated. It consists of:

- Project plan development – integrating and coordinating all project plans to create a consistent, coherent document.
- Project plan execution – carrying out the project plan by performing the activities included therein.
- Integrated change control – coordinating changes across the entire project.

5.3.2.2 *Project Scope Management*

A subset of project management that includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It consists of:

- Initiation – authorising the project or phase.
- Scope planning – developing a written scope statement as the basis for future project decisions.

⁷⁰ Project Management Body of Knowledge, 2000, American Project Management Institute

- Scope definition – subdividing the major project deliverables into smaller, more manageable components.
- Scope verification – formalising acceptance of the project scope.
- Scope change control – controlling changes to project scope.

5.3.2.3 *Project Time Management*

A subset of project management that includes the processes required to ensure timely completion of the project. It consists of:

- Activity definition – identifying the specific activities that must be performed to produce the various project deliverables.
- Activity sequencing – identifying and documenting interactivity dependencies.
- Activity duration estimating – estimating the number of work periods that will be needed to complete individual activities.
- Schedule development – analysing activity sequences, activity durations, and resource requirements to create the project schedule.
- Schedule control – controlling changes to the project schedule.

5.3.2.4 *Project Cost Management*

A subset of project management that includes the processes required to ensure that the project is completed within the approved budget. It consists of:

- Resource planning – determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.
- Cost estimating – developing an approximation (estimate) of the costs of the resources needed to complete project activities.
- Cost budgeting – allocating the overall cost estimate to individual work activities.
- Cost control – controlling changes to the project budget.

5.3.2.5 *Project Quality Management*

A subset of project management that includes the processes required to ensure that the project will satisfy the needs for which it was undertaken. It consists of:

- Quality planning – identifying which quality standards are relevant to the project and determining how to satisfy them.
- Quality assurance – evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.
- Quality control – monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.

5.3.2.6 *Project Human Resource Management*

A subset of project management that includes the processes required to make the most effective use of the people involved with the project. It consists of:

- Organisational planning – identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.
- Staff acquisition – getting the needed human resources assigned to and working on the project.
- Team development – developing individual and group skills to enhance project performance.

5.3.2.7 *Project Communication Management*

A subset of project management that includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It consists of:

- Communications planning – determining the information and communications needs of the stakeholders: who needs what information, when they will need it, and how it will be given to them.
- Information distribution – making needed information available to project stakeholders in a timely manner.

- Performance reporting – collecting and disseminating performance information. This includes status reporting, progress measurement, and forecasting.
- Administrative closure – generating, gathering, and disseminating information to formalise phase or project completion.

5.3.2.8 *Project Risk Management*

Risk management is the systematic process of identifying, analysing, and responding to project risk. It includes maximising the probability and consequences of positive events and minimising the probability and consequences of adverse event to project objectives. It includes:

- Risk management planning – deciding how to approach and plan the risk management activities for a project.
- Risk identification – determining which risk might affect the project and documenting their characteristics.
- Qualitative risk analysis – performing a qualitative analysis of risks and conditions to prioritise their effects on project objectives.
- Quantitative risk analysis –measuring the probability and consequences of risks and estimating their implications for project objectives.
- Risk response planning – developing procedures and techniques to enhance opportunities and reduce threats from risk to the project’s objectives.
- Risk monitoring and control – monitoring residual risks, identifying new risks, executing risk reduction plans, and evaluating their effectiveness throughout the project life cycle.

5.3.2.9 *Project Procurement Management*

A subset of project management that includes the processes required to acquire goods and services to attain project scope from outside the performing organisation. It consists of:

- Procurement planning – determining what to procure and when.
- Solicitation planning – documenting product requirements and identifying potential sources.
- Solicitation – obtaining quotations, bids, offers, or proposals, as appropriate.
- Source selection – choosing from among potential sellers.
- Contract administration – managing the relationship with the seller.
- Contract closeout – completion and settlement of the contract, including resolution of any open items.

5.3.3 Project Life Cycle

Figure 2: Project Life Cycle

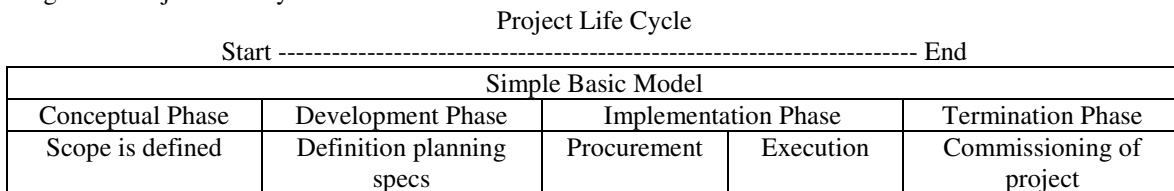


Table E: Six Elementary Project Management Processes

Starting up a project	Controlling a stage	Managing stage boundaries
Initiating a project	Managing product delivery	Closing a project

Conceptual Phase: The conceptual phase is the one with the most crucial influence on the eventual success of a project. The ultimate goal of the project must be compatible with the constraints of limited resources. As the project progresses, the influence of this phase on the possible project success will diminish if the scope of the project is unrealistic in terms of the given constraints. The determined scope of the project must be realistic in regard to cost, time, quality, risk and human resources. Sufficient time must be spent on this design phase of the project.

Development Phase: During this phase the specifications of the project are finalised and time planning is done. The exact amount of money needed to complete the project is established, and a schedule is drawn up with milestones.

Implementation Phase: Execute the project according to the plan created in the development phase.

Termination Phase: This is the project (pre-scheduled) closeout.

5.3.4 Project Management Phases

These connections are illustrated in figure 4. In addition, the project management process groups are not discrete, one-time events; they are overlapping activities that occur at varying levels of intensity throughout each phase of the project. Figure 5 illustrates how the process groups overlap and vary within a phase.

Figure 4: Links among Process Groups in a

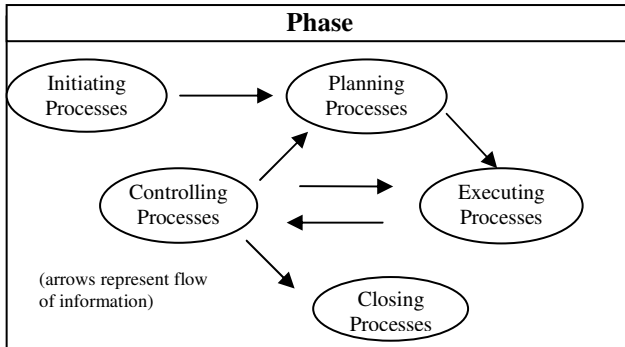


Figure 5: Overlap of Process Groups in a Phase

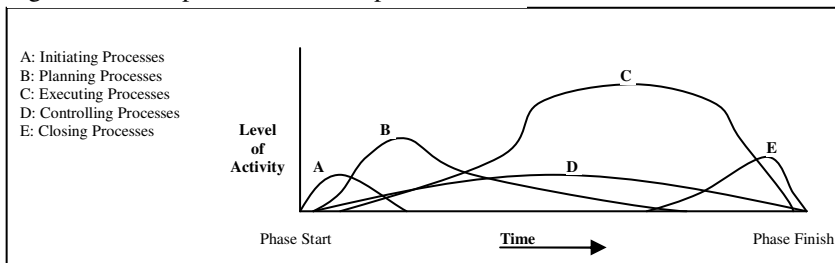


Table F: Project Management Processes, Process Groups and Knowledge Areas

Process Groups	Initiating Phase	Planning Phase	Executing Phase	Controlling Phase	Closing Phase
<i>Knowledge Area</i>					
<i>Project Integration Management</i>		Project Plan Development	Project Plan Execution	Integrated Change Control	
<i>Project Scope Management</i>	Initiation	Scope Planning Scope Definition		Scope Verification Scope Change Control	
<i>Project Time Management</i>		Activity Definition Activity Sequencing Activity Duration Estimating Schedule Development		Schedule Control	
<i>Project Cost Management</i>		Resource Planning Cost Estimating Cost Budgeting		Cost Control	
<i>Project Quality Management</i>		Quality Planning	Quality Assurance	Quality Control	
<i>Project Human Resource Management</i>		Organization Planning Staff Acquisition	Team Development		
<i>Project Communications Management</i>		Communications Planning	Information Distribution	Performance Reporting	Administrative Closure
<i>Risk Project Management</i>		Risk Management Planning Risk Identification Qualitative Risk Analysis Quantitative Risk Analysis Risk Response Planning		Risk Monitoring & Control	
<i>Project Procurement Management</i>		Procurement Planning Solicitation Planning	Solicitation Source Selection Contract Administration		Contract Closeout

Appendix 6 Programme Evaluation

6.1 Programme Setting

To evaluate the Sekhukhuneland Development Programme (SDP) the programme management is described and discussed in the Appendix Programme Management. The four-phased approach of Pilot, Training, Construction and Renewal is used to evaluate the SDP programme cycle:

Evaluated periods	Programme Phases
- Period 1999H	Pilot
- Period 2000A	Pilot
- Period 2001A	Training
- Period 2001H	Training
- Period 2002H	Construction

From this input the following setting in the programme cycle is subtracted: Pilot Phase, Training Phase and Construction Phase.

These phases are discussed in the following paragraphs. But it has to be recognised that these phases are identified after they were started, although discussions have taken place about the SDP and what the programme entailed never resulted this in writing down a long-term approach by the Head-Office.

The SDP operated under the following Goal:

To uplift the rural communities in the Sekhukhuneland Area using Labour Intensive Construction Methods and Local Resources for the able-bodied poor who are willing to work within the constraints of a construction-training programme.

With the evaluation of the SDP the following items will be discussed⁷¹: context characteristics, programme characteristics and programme outcomes.

6.2 Pilot Phase

This phase in the Sekhukhuneland Development Programme consists out of two periods that are discussed in the following paragraphs.

6.2.1 Context Characteristics of Period 1999H

6.2.1.1 Programme Phase Background

Because contacts existed between the Research Centre WORK and the Donaldson Trust through members of the Trusts Board, and both parties were interested in developing the Sekhukhuneland area, resources were combined to investigate the feasibility of this option. After Prof. R.T. McCutcheon had met the historian of the area Prof. P. Delius, the decision was taken that this would be feasible with the use of labour intensive construction methods. During 1998 the area of Sekhukhuneland quieted down after a second period of violence during the late nineteen eighties. When the Research Centre WORK put forward a proposal to the Donaldson Trust board of the feasibility of an infrastructure project with labour intensive means in the Sekhukhuneland area, they were enthusiastic and donated a limited sum of money to investigate this possibility and start construction. This project went ahead after a suitable Project Manager, who was willing to work under primitive and restricted conditions, was found.

6.2.1.2 Programme Phase Objective

The main objective of this pilot project was:

To examine and to demonstrate the feasibility of labour intensive construction methods in Sekhukhuneland.

⁷¹ See Appendix Evaluation Model, Programme Management

From this objective the following focus group was selected: the able bodied poor willing to work. This did not take into account any gender related objections to employ a person that was able and willing to work in the project. Age was taken into account; the person had to be older than eighteen.

6.2.1.3 Programme Characteristics of Period 1999H

To achieve the programme goals, preparations were made during the period November 1998 till March 1999. This preparation proved to be insufficient during the delivery phase. During the delivery phase it was envisioned that the Head-Office would support the Site-Office. This support focussed on the payment of wages, and purchasing the ordered goods. Both items proved to be difficult to obtain during the delivery stage, under the applied working conditions. In practise the distance between Head-Office and Site Office was too big, and no regular visits were paid to evaluate and support the Site Operation. During the construction stage more and more was left to the Site-Office, without enlarging the capacity of the Site-Office. Reasons were available for this decision but the time consuming activities took away the possibility to evaluate the delivery phase. In combination with the relative inexperience of the Project Manager without qualified college to consult, problems and issues arose that could have been avoided. This resulted in unnecessary mistakes and delays, which again resulted in an extension of the needed time for construction. The setting chosen at Head-Office was not sufficient to deal with the problems. Because the Client took interest in the project the executive-director of the Donaldson Trust was personally involved in assisting in day to day financial activities.

During the delivery phase the operations looked more like an ad hoc construction than a controlled process. Usually the Project Manager would order during the week the necessary tools and material which would than be purchased by Head-Office and stored at the garage at the University of the Witwatersrand. But most of the time items were missing and it took another week before the required items were on Site.

6.2.2 Programme Outcomes of Period 1999H

6.2.2.1 Construction Period

The actual construction took place from April 1999 to July 1999. During the construction period a peak number of labourers was reached during June 1999 of 89 people.

6.2.2.2 Programme Phases

The initiation was made in the period from September 1998 to December 1998. Over this period several trips were made to the Mohlaletse area to allow student investigations and research to be done. The funding was arranged after a student of the Research Centre WORK did a preliminary study. This funding was secured in the beginning of 1999 when the client, the Donaldson Trust, allocated R250.000 to start a pilot project.

During this period the time used during the Definition and Planning phase was approximately the same time as that of the projects' Delivery phase. This meant that during the Definition and Planning phase the following two persons, W.P.C. van Steenderen and H.E. van Zandvoort, were involved on almost a daily bases.

After closure it became clear that the Research Centre did not have the capability in resources to continue this programme under the current conditions. So an alternative solution was investigated to hire a Bachelor Student from Wits to continue the programme, this option was abandoned when the person in question did not show sufficient interest.

6.2.2.3 Programme Phase Achievements

The construction that was undertaken consisted out of the following elements:

Two large drifts, three splashes, one arch culvert, upgrading three culverts, relaying part of the water pipe network and upgrading drainage structure along the road for about two kilometres⁷².

During this period contacts and trust were gained in the community by the organisation and the programme.

⁷² Section from the intersection in the village into the direction of the bridge over the Mohlaletsi river

6.2.2.4 Programme Phase Period Cost

The total cost in this period was R232.941 this was divided into Head-Office (R27.198, 12%) and Site-Office (R205.743, 78%). What has to be said is that cost that could not be allocated was placed under the heading 'Other' at Head-Office. This means that of the total cost spent on Head-Office an amount should be allocated to Site-Office, but because specific information is missing about the exact amount this is not done. Mainly the item 'Taxi Fees' is missing. This item could not be more than about R5.000, based on the knowledge that not all workers went to collect money when they were given the opportunity every two weeks. Because of this it could be assumed that about 10% of the total amount went to the Head-Office during this period.

Table G: Summary Cost (Table SC1999H)

Total Period Cost R232.941 (100%)			
Item	Sub-item	Amount	Percentage
Head-Office	Indirect	R 27.198	12%
Site-Office	Direct	R 205.743	78%
<i>Site-Office</i>	<i>Direct Overhead</i>	<i>R 62.098</i>	<i>26%</i>
Direct Overhead	Tools and Equipment	R 24.177	10%
<i>Site-Office</i>	<i>Direct Variable</i>	<i>R 143.646</i>	<i>62%</i>
Direct Variable	Labour	R 100.511	43%
Direct Variable	Material	R 43.134	18%
Material	Small-Contractor	R 18.525	8%
Material	Material	R 24.609	10%

Percentage is of period total cost

6.2.2.5 Programme Phase Success

After the construction was terminated an overall relief was encountered. For the Head-Office it had been a success, but it clearly indicated what should be investigated if this type of operations were to be repeated in this type of setting. During the delivery stage no serious injuries to labourers occurred, this result was achieved largely by the work force responsibility towards the allocated task and "luck". The Client was very pleased with the result and wanted to continue the programme. The community was happy and wanted to be included in any continuation, a particular success was the arch-culvert that survived the February 2000 floods. This enlarged the trust and believes in the construction method by the user, the community.

All the parties involved considered the project to be a success, but there were strong recommendations made in a report written during September 1999. These recommendations were only not included in the second pilot in 2000, and only partly included in the new approach in 2001.

6.2.3 Context Characteristics of Period 2000A

6.2.3.1 Programme phase Background

During the first months of 2000 heavy rains fell down in the Southern Region of Africa. These rains damaged most infrastructures throughout the region; this was also the case in Mhlaletse. Repairs were undertaken in the village during a three-week period. It was understood by the Mhlaletse community that the Donaldson Trust would continue the programme as soon as possible, but by June 2000 there was still no sign of a new start up. The Mhlaletse community insisted on a new project and this had to happen as soon as possible. The Research Centre WORK did not want to commit to many resources, but did want to assist in finding a new Project Manager. Possibilities were investigated and an option was found in an exchange student from the Netherlands, who had graduated in 1999 at the Research Centre WORK. When the Project Manager arrived from the Netherlands, he was directly send off to Mhlaletse and restarted the programme.

6.2.3.2 *Programme Objective*

The main objective of this pilot project was:

To continue the Sekhukhune Development Programme under the same conditions as the project in 1999, with the aim to establish a firm base for future operations.

From this the same target group was used. Other items that were investigated were a change in the transportation-system, with a reduction of donkey-cart use and a focus on the tractor-trailer system and a team-based weekly task system.

6.2.4 **Programme Characteristics of Period 2000A**

During this project more students were involved in planning and designing. Although these functions were undertaken by Head-Office, which was based in Johannesburg at the Research Centre WORK, there were still communication problems. Major problems arose when the Site-Office started to feel the lack of training and lack of understanding by the team leaders of the work process. This was made worse, because the project manager thought that this work process was known to the work force. After consulting with Head-Office it was decided to terminate construction by December 2000. This was encountered with disbelief by the community that did not understand why the organisation did not want to continue in the current set-up. This misunderstanding did arise because the Head-Office did never give the information gained by the last project, and did not allow for sufficient time to prepare the construction that needed to be undertaken. During delivery stage the design, was found to be insufficient and needed to be adjusted because the student design-team had forgotten to take into account certain aspects of the local situation⁷³. In addition the feedback form the Site-Office was evaluated in sporadic meetings with the parties involved, which resulted in creating the wrong picture at the Head-Office.

6.2.5 **Programme Outcome of Period 2000A**

6.2.5.1 *Construction Period*

The construction took place over a period from the last week in September till the third week in December. During most of this period a number of 68 people were employed.

6.2.5.2 *Programme Phases*

In the discussions, between contractor Point-of-Fact⁷⁴, consultant EIEC, consultant the Research Centre and client Donaldson Trust, it was clear that the programme was picking up momentum. But it was clear to the actors that funding would become a major issue if additional funding was not found. The Donaldson Trust was not intending to allocate more money then around R250.000 annually, during a period of three to five years, in which it should be feasible to interest and involve different clients in the SDP. The external parties, EIEC and WORK were not charging professional fees, this to allow the project manager to spent as much money as possible on the budget of Site-Office.

6.2.5.3 *Programme Achievements*

The main construction took place in the central part of Mhlaletse but this time not along the road to the Post-Office. Students had calculated that the amount of water running down the mountains was too big and to destructive to allow the water to reach the road, there for a grouted stone pitched channel was constructed to divert that water along an other route. This channel would flow through a build up village area past a secondary high school and into a donga⁷⁵, which transported the water into the Mhlaletse River. This connection between the donga and the channel had to cross a road, to allow this a large gabion⁷⁶ drift was constructed. During the February floods the drainage construction at the intersection showed that the capacity was not sufficient, so at the intersection a second Arch Culvert was constructed. A start was made with the construction of the drainage along the road to the Post-Office starting at the Post-Office.

⁷³ These conditions were familiar to the Research centre WORK, but were never mentioned due to lack of input

⁷⁴ During 2000 the company LITE was founded but in the 2000 period the contactors name was still Point-of-Fact

⁷⁵ Large erosion channel follows uncontrolled streambed down to collecting area, mostly streams or rivers.

⁷⁶ This construction type uses a galvanised steel wire box, which is filled with rock

6.2.5.4 Programme Cost

The total cost in this period was R176.731 this was divided into Head-Office (R14.421, 8%) and Site-Office (R162.310, 92%). What has to be said is that costs that could not be allocated were placed under the heading 'Other' at Head-Office. What is not entirely clear is what was spent on petrol from Johannesburg to Mhlaletse and back, in combination with the amount spent on petty cash.

Table H: Summary Cost (Table SC2000A)

Total Period Cost R176.731, 100%			
Item	Sub-item	Amount	Percentage
Head-Office	Indirect	R 14.421	8%
Site-Office	Direct	R 162.310	92%
<i>Site-Office</i>	<i>Direct Overhead</i>	<i>R 40.376</i>	<i>23%</i>
Direct Overhead	Tools and Equipment	R 4.098	2%
<i>Site-Office</i>	<i>Direct Variable</i>	<i>R 121.934</i>	<i>69%</i>
Direct Variable	Labour	R 99.647	56%
Direct Variable	Material	R 22.288	13%
Material	Small-Contractor	R 9.668	6%
Material	Material	R 12.620	7%

Percentage is of period total cost

6.2.5.5 Programme Success

After the arrival of the Project Manager the project had a minimum amount of time to prepare, plan and design. Although students and an engineer from the Research Centre WORK assisted the project manager, these preparations were not sufficient to allow for a smooth run of the construction operations. The experience that was gained last year was not put to use and by November the programme had ran into so many problems that it was decided to terminate and have a fresh start in 2001. The Client (Donaldson Trust) wanted to start as soon as possible and had made promises in the area about what was going to happen, from this the community had high expectations. The old transport-system of donkey-cart haulage was investigated, but ran into serious problems with the community. Two problems were identified: first the payment and second the group of contractors. There was no time to overcome these problems; therefore a different option was investigated. This resulted in the use of tractor-trailer. But even this did not work according to the project manager's satisfaction and the reliability was questionable especially during planting or harvest season⁷⁷. Further problems were encountered with the team leader; they did not understand the given tasks and the team leaders' responsibilities. This team leader problem became so problematic that the restart of the programme was ordered by November 2000. After discussions with Point-of-Fact, the Research Centre WORK, EIEC and Donaldson Trust it was decided to write a training programme specially designed to train team leaders for the capacity building for contracted construction in areas like Sekhukhuneland.

6.3 Training Phase

This programme phase in the Sekhukhuneland Development Programme consists out of two periods: Period 2001A and Period 2001H. These periods will be discussed in the following paragraphs.

6.3.1 Context Characteristics of Period 2001A

6.3.1.1 Programme Background

In accordance with the findings of the Pilot Phase of the SDP a period of preparations was entered in the beginning of 2001. This meant that the company LITE⁷⁸ and the Research Centre WORK investigated and started writing a Training Course. This training course was especially designed to train and educate the required team leaders, these team leaders would be able to construct and assist supervising the construction. During the start of the Period 2000A contacts were made with the Fetakgomo Municipality and Anglo

⁷⁷ Owners could earn more money during these periods with that type of work

⁷⁸ Point-a-Fact was renamed and is now known under the name Labour Intensive Training and Engineering LITE

Platinum Mine Atok. Both parties were extremely interested in the programme and the outcomes of the programme. The Anglo Platinum Group had allocated an initial amount of R600.000 to construct a similar project as the 1999H Period. But because the capacity was lacking to directly make use of this amount this was reduced to R540.000 for the period 2001. Initially the idea was to invest the largest part of this sum in the Monametse area. The Anglo Platinum Mine, however, allowed LITE to use the money as LITE saw it appropriate at the two construction sites, Mohlaletse as well as Monametse.

6.3.1.2 Programme Objective

The main objective of this training project was:

To start a training-phase which would result in a number of trained team leader that would be used in the construction undertaken at the two construction sites Mohlaletse and Monametse.

This meant that the target group changed from using the whole community for construction into using the community to identify and make a selection of potential team leader for the training course. These team leaders had to have a minimum level of education, speak and understand English and had to be willing to work. During the selection of the potential team leaders a small test was used, the gender of the participant did not matter.

6.3.2 Programme Characteristics of Period 2001A

The Research Centre WORK did have the knowledge to undertake this writing of a training course, but had a limited the capacity. A solution was found in the idea that a trainer would assist the Project Manager. This resulted in the following approach:

A Writer⁷⁹ would be writing the course at the Research Centre WORK. The finished modules were given to the Training Team, consisting out of Project Manager and Assistant/Trainer. This team would use the modules and report back to the writer at the Research Centre WORK. These notes on the modules were used to re-write the modules, this Finished Training Course was presented during September 2001. Because the Writer was also involved in other activities at the Research Centre, the writing was done on limited time base. This resulted practically in long working hours and just in time delivery of training course modules. The result was ad hoc management of the training and a quality of teaching that was questionable. Although the Project Manager, Trainer and Writer were in regular contact the writing took longer than expected. The Training Course did not have a sufficient amount of practical lessons in it; this was the result of limited time and pressure from both Client and Community to continue construction. The training took longer than expected due to delays in delivery of models, and problems encountered during the training. The facilities that were available to the training course trainees were limited and they had to be accommodated in the Alliance Church in Mohlaletse. The planning was insufficient and the Project Manager was not really managing but more involved in small practicalities of the SDP. The trainees were lacking the educated background, which resulted in extra lessons during evenings. The passing rate had dropped from a 75% to 65%, and the trainees had three possible opportunities to pass the exams that were given after every Chapter.

The LITE organisation had selected the board members from the Village Mohaletse and from the involved main actors Donaldson Trust, EIEC and WORK a complex situation enfolded. In combination with the not clearly defined positions of the actors involved misunderstanding and communication between the different actors became problematic. This resulted in investments that were not properly motivated and caused tensions between Site-Office and Head-Office. These problems were mentioned in a transition meeting in August 2001. At this meeting a programme and project approach was proposed by the departing Project Manager, this proposal was never agreed upon. This resulted in an unclear situation for the new Project Manager to start in.

⁷⁹ The person who wrote the whole Team Leader Training Course was W.P.C. van Steenderen and H.E. van Zandvoort

6.3.3 Programme Outcome of Period 2001A

6.3.3.1 Construction Period

The classroom training took place over a period from March 2001 to June 2001. During this period nobody was employed. Only in the Month July small construction projects were undertaken to ensure that the community would not question the continuity over the period until the closedown August.

6.3.3.2 Programme Phases

The need and the idea of a training programme before the construction is started is something that several institutions stress on. The director, Prof. R.T. McCutcheon, of the Research Centre WORK has personal experience in the field and use in programmes like that. Therefore it was no surprise that when the conclusions were drawn from the pilot phase the Research Centre WORK was supporting this idea. The organisation LITE had no experience in writing a course like this but had resources that could be used to produce this document. During this phase the company strategy and company approach were in the hands of the Executive Director and the Project Manager. Contacts were made with different organisations and the “closed situation” that had existed was changed in an involvement by the LITE organisation in local, regional and national projects, programmes and discussions.

6.3.3.3 Programme Phase Achievement

The training course resulted in seventeen theoretically trained team leaders. A document was produced that was now available for future training. The document had been used and evaluated by the users, which resulted in an up-dated version, by September 2001. The team leaders were now ready to start the next stage; the practical training. In the programme setting a new management level was introduced, that of the Supervisor and/or the Trainer. This new level had resulted in the hiring of new personnel, and potential contacts for future requirements.

6.3.3.4 Programme Phase Cost

The total cost in this period was R178.597 this was divided into Head-Office (R7.162, 4%) and Site-Office (R171.435, 96%). What has to be said is that costs that could not be allocated were placed under the heading ‘Other’ at Head-Office.

Table I: Summary Cost (Table SC2001A)

Total Period Cost R178.597, 100%			
Item	Sub-item	Amount	Percentage
Head-Office	Indirect	R 7.162	4%
Site-Office	Direct	R 171.435	96%
Site-Office	Direct Overhead	R 149.799	84%
Direct Overhead	Tools and Equipment	R 25.918	15%
Site-Office	Direct Variable	R 21.636	12%
Direct Variable	Labour	R 10.961	6%
Direct Variable	Material	R 10.675	6%
Material	Small-Contractor	R 1.858	1%
Material	Material	R 8.817	5%

Percentage is of period total cost

6.3.3.5 Programme Phase Success

The set-up of this phase was done over a prolonged period and only in the second period of the year, in July 2001, the actual construction started. Because of the new situation of two separate construction sites, Mohlaletse and Monametse, it was decided that from both locations ten potential team leaders were selected. From this initial group of twenty trainees, seventeen finished the first theoretical training phase. After this phase a start was made with the practical phase of the training course, which only lasted about a month. Already during this period discussions took place between the Project Manager and the Work Force about wages, task size and safety. This would continue in the next period, but a strike at Mohlaletse all ready demonstrated serious discontent in the Work Force. The cost of the training was kept at a minimum;

this resulted in a picture that is not accurate if these costs are used to estimate a training programme in the future. Still, all things were considered to be going as planned and the Clients were content and wanted to continue. The situation in Monametse had developed in using facilities from the Platinum Mine Atok; this changed the situation on Site. The Project Manager had a better working environment, this resulted in more time spent at the Monametse site in comparison with the time spent at the Mohlaletse site. This contributed to the strike at Mohlaletse in the month of July 2001. This situation could damage and jeopardise the entire Sekhukhuneland Development Programme for the continuation after August but more so at that current moment.

6.3.4 Context Characteristics of Period 2001H

6.3.4.1 Programme Background

The programme entered the phase, building up to the actual construction. This meant that decision had to be made on what construction had to be undertaken and how the budget was allocated. At this stage the budget was still not enlarged with contributions of new potential clients or donors. Again the institutional setting was lacking a professional structure that could function and operate independently from support of EIEC and WORK without paying the professional fees. In meetings it was stressed that the communication had to improve, and the programme needed more structure. Proper task descriptions and written agreements on responsibilities were lacking, meetings were not held to make decisions but just to inform Head-Office, and internally this created tensions and insecurity. In this setting the Client still hoped that a large number of labourers would be hired to start constructing the needed infrastructure. The mine had made arrangements for locating LITE members at their Atok Mine; this had been the case during the last period. The new project manager turned down this possibility, because the centre of the operations was going to be at Mohlaletse not at Monametse.

6.3.4.2 Programme Phase Objective

The main objective of this training project was:

To complete the training-phase which would result in a number of trained team leader that would be used in the construction undertaken at the two construction sites Mohlaletse and Monametse.

The target group was enlarged to whole community, this to ensure the initial objective of reaching the able bodied poor that are willing to work.

6.3.5 Programme Characteristics of Period 2001H

During this period a decision was taken to start building a compound that would consist out of a U-shaped central block, with when possible an office and garages. This was not only done because the situation on Site could no longer accommodate the personnel in an appropriate manner, but also to show to the community LITE would stay for longer. Research had all ready been done during the training period 2001A. The Research Centre WORK that had arranged the drawings and technical design and personnel executed this research. The Engineer of the Research Centre WORK that was involved in the construction had also other responsibilities. Therefore students had been arranged to assist in this research and supervise the construction. During this construction period, mistakes were common in design and during the construction. A combination of over-stretched resources, lack of communication and the unclear Head-Office structure were responsible for this situation. This would create tension and uncertainty not only between Head-Office and Site-Office but also between Site-Office and the Work Force. Management of the Programme happened ad hoc; this meant that there was a great flexibility but also a lack of direction during the delivery of the projects.

The training course was not yet accredited by the South Africa institutions; this meant that any certificate that was given to the participants was not recognised by any institution except the LITE organisation.

6.3.6 Programme Outcome of Period 2001H

6.3.6.1 Construction Period

The second training period ran from the beginning of September 2001 till the second week of December. During this period a fixed number of labourers of around 55 people were employed in the construction of the infrastructure in Mohlaetse and Monametse. The number of people involved in the construction of the Compound slowly increased to a total of 14 people.

6.3.6.2 Programme Phases

As described in the earlier periods, the idea behind the programme was the development and delivery of infrastructure to the Sekhukhuneland area. The Training Phase could be finished and the construction could be started, if the funds would allow so. What became clear from the training course was that the next course needed a better combination between Theory and Practise. Although a team of members from the Research Centre WORK and the organisation LITE wrote the training course, the Research Centre WORK did the planning and designs. The practical implementation was done by LITE. During this stage it became clear that in the practical training special attention should be given to the task-system, productivity, quality and planning. These items were identified as training period aims.

6.3.6.3 Programme Phase Achievement

During this period the trainees finished their course and this resulted in twelve fully trained team leaders. At Mohlaetse work began on the road, from the Post-Office down to the intersection, and the building of the Compound. At Monametse construction continued on the bridge, the extension of the culverts and the upgrading of the road.

6.3.6.4 Programme Phase Cost

The total cost in this period was R506.076 this was divided into Head-Office (R25.306, 5%) and Site-Office (R480.770, 95%). It should be stated that cost that could not be allocated were placed under the heading 'Other' at Head-Office. The increase of cost of construction is enormous during this stage, as can be seen in the total numbers. Still the amount spent at the Head-Office is low in comparison to what has been undertaken by the organisation LITE.

Table J: Summary Cost (Table SC2001H)

Total Period Cost R506.076, 100%			
Item	Sub-item	Amount	Percentage
Head-Office	Indirect	R 25.306	5%
Site-Office	Direct	R 480.770	95%
Site-Office	Direct Overhead	R 292.068	58%
Direct Overhead	Tools and Equipment	R 208.613	41%
Site-Office	Direct Variable	R 188.702	37%
Direct Variable	Labour	R 114.702	22%
Direct Variable	Material	R 74.000	15%
Material	Small-Contractor	R 15.568	3%
Material	Material	R 58.432	12%

Percentage is of period total cost

6.3.6.5 Programme Phase Success

Again the success was positive towards the objectives stated. During this period extensive effort was taken to ensure that a sufficient amount of money was available to ensure for the continuation of the organisation. Contacts with the Donaldson Trust, Fetakgomo Municipality or Anglo Platinum Group were pursued to achieve this goal. The Anglo Platinum Mine at Atok did assist in a number of ways, and had already allowed the use of materials, which could be collected at the location of Shaft three.

During this period disputes were increasing between the board members of LITE, the communication was not improved and there was no clarity about which direction the programme would take. During this period a new client was approached, the Umsobomvu Youth Fund. They were interested in starting a youth

training programme in the Mhlaletse area. A large amount of money would be involved in a contract over a prolonged period. This could be the funding that could secure the organisation LITE over a longer period. Clarity was not given, by the Head-Office, about this option during the final weeks of December 2001; this resulted in misunderstanding between members of the LITE organisation, the consulting organisation EIEC and the supporting organisation the Research Centre WORK.

6.4 Construction Phase

6.4.1 Context Characteristics of Period 2002H

6.4.1.1 Programme Phase Background

The training phase finished and the programme continued with the next phase, that of the construction. The programme had a limited amount of financial resources allocated to continue this programme. Talks were on the way for a new programme to start in April 2002, promises were made to the Site-Office that the Head-Office was looking for and had already found new personnel to support and strengthen the Site-operations before this date. This did not happen and the Programme Manager on Site had to allocate the limited time available between these two Programmes. The board members of LITE were unable to come to a decision about what had to happen with the programme already running and what structure should be used for the new programme. Part of the LITE-board wanted to involve the Research Centre WORK, the other part opposed to this. By March it was clear that no new higher site management personnel would be arriving soon. The preparations and the constructions continued. During May support arrived on Site for the higher management and a period of transition began. During this period the old manager included the new manager in the site operations and tried to forward as much knowledge and experience as possible. The old manager left the organisation in July, but would assist if requested. The new manager left the organisation shortly after that, by the end of August. The SDP was shutdown during July, mainly because funds had run out and no new client or donor was found to continue the programme. The team leaders at Mhlaletse were transferred to the Mhlaletse Youth Service Programme (MYSP), to keep these resources available to the organisation LITE. A different reason was because it already had become clear that the designed organisational structure was insufficient to deal with the programme requirements.

6.4.1.2 Programme Phase Objective

The main objective of this training project was:

To continue the construction-programme into the construction-phase and start reaching the target group with financial means.

The target group was enlarged to whole community, this to ensure the initial object of reaching the able bodied poor that are willing to work.

6.4.2 Programme Phase Characteristics of Period 2002H

Now that the construction stage was entered, new items became clear to the Site-management. Especially practicalities, those were of lesser interest of the supporting organisation the Research Centre WORK. Personnel on site had the need for drawings, plans and documentation. These things were not supplied by Head-Office, due to lack of personnel. In the beginning of 2002 the Engineer that had been working for the Research Centre WORK was employed by LITE. This allowed a smoother process of design and communication with the Site-operations. But this resource was already occupied with the writing of a new course for the Mhlaletse Youth Service Programme. This meant that the Engineer in preparing this document, consumed more time for this preparation than was done on assisting and resolving the issues from Site. Again Students were used during the construction as supervisory personnel, but it became clear that the Students from the Research Centre needed extensive guidance. This was time consuming and LITE did not have the resources on site to handle that type of involvement. Extra supervisors were employed to create continuity during the construction of the LITE-House and School. This was received well by the work force involved. From a management point of view the situation did not really change, operations were still handled in an ad hoc way. This resulted in the tension between the different actors. Clarity was not

given in what had to be expected concerning the new programme and the positions within the organisation became more and more in dispute. Discussions were not focused on resolving the situation at hand, but more on who had control over what and how much. This resulted in tensions between Head-Office and Site-Office that could easily have been avoided.

The support of the local communities was still very large and growing. The use of storage space at members of the community continued and in this process a larger understanding by the community was achieved. During the construction of the many projects more and more community involvement was achieved by using larger number of contractors.

6.4.3 Programme Outcome of Period 2002H

6.4.3.1 Construction Period

This construction period ran from February 2002 till third week in July. During this period a fixed number of around 55 labourers were employed in the construction of the infrastructure in Mohlaletse and Monametse. The idea to increase the number of labourers under each team leader as this team leaders became more capable to handle larger teams, was not put to use due to insecurity of funding. Although preparations were taken for a second training course, the funding for that training course would only be used in the Mohlaletse Youth Service Programme. The number of people involved in the construction of the LITE-house and the LITE-School slowly increased to a total of 16 people. This group consisted out of two team leaders, four builders and labourers.

6.4.3.2 Programme Phases

After the finishing of the training phase, in September 2001, a construction phase was started directly after this period. Many items that were taught during the training course were now put to use. The result was a reduction in construction time per task, and a better understanding by the Work Force of what they were doing. The construction phase continued and reached positive results after the training phase. In this period the team leader and supervisor wanted written documents that were telling them what to do and how. This request had already surfaced during the previous periods, this request was put to the Research Centre WORK but was given no priority and put on the shelf.

6.4.3.3 Programme Phase Achievement

During this period the construction continued on the LITE-house in the same time construction started on the LITE-school. At Mohlaletse work continued on the road, from the Post-Office down to the intersection. On this road the construction of a large drift continued to be a problem, the design had been too difficult to understand by the supervisor and the team leader. This construction was finished as best as possible but the result was disappointing. At Monametse construction continued on the bridge and was finished. The extension of the culverts continued but was not completely finished and the upgrading of the road continued from the bridge to the mineshaft three, but was never finished.

6.4.3.4 Programme Phase Cost

The total cost in this period was R605.455. This was divided into Head-Office (R23.467, 4%) and Site-Office (R581.986, 96%). It should be stated that cost that could not be allocated were placed under the heading 'Other' at Head-Office. The increase of construction costs is enormous during this stage compared to the first three periods, as can be seen in the total numbers. Still the amount spent at the Head-Office is low in comparison to what has been undertaken by the organisation LITE. After evaluation of this sum and the amount in the previous period it can be stated that a large portion of this increase can be allocated to generating sufficient amount of capacity in the Site organisation of LITE to undertake the construction projects. Most of that money was spent on tools and equipment. That sum came close to R400.000. No financial recovery system was put in place to cover the lost investment. Head-Office was still operating with limited resources.

Table J: Summary Cost (Table SC2002H)

Total Period Cost R605.455, 100%			
Item	Sub-item	Amount	Percentage
Head-Office	Indirect	R 23.467	4%
Site-Office	Direct	R 581.988	96%
<i>Site-Office</i>	<i>Direct Overhead</i>	<i>R 250.904</i>	<i>41%</i>
Direct Overhead	Tools and Equipment	R 80.532	13%
<i>Site-Office</i>	<i>Direct Variable</i>	<i>R 331.085</i>	<i>55%</i>
Direct Variable	Labour	R 145.132	24%
Direct Variable	Material	R 185.953	31%
Material	Small-Contractor	R 38.723	6%
Material	Material	R 147.230	24%

Percentage is of period total cost

6.4.3.5 Programme Phase Success

The programme had succeeded in training and employing the trained team leaders. The continuation of the programme was not achieved; due to lack of acquiring more funding for the SDP. The continuation was ensured by a new Client who would be willing to start a new programme. The Clients that were used over this period were satisfied with the results and talks were going on for new funding from their sides. The community of Mhlaletse was particularly satisfied with the improvements of their village infrastructure. They wanted to continue, and during 2002, they blocked a proposal to re-gravel the road from the Post-Office to the bridge by an outside contractor. The reason for this was that this contractor was not willing to use labour intensive methods. The SDP had resulted in contacts with institutions and organisations in several ranges, from local to international.

Appendix 7 Cost Sekhukhuneland Development Programme⁸⁰

7.1 Period Cost Tables

7.1.1 Period 1999H

7.1.2 Period 2000A

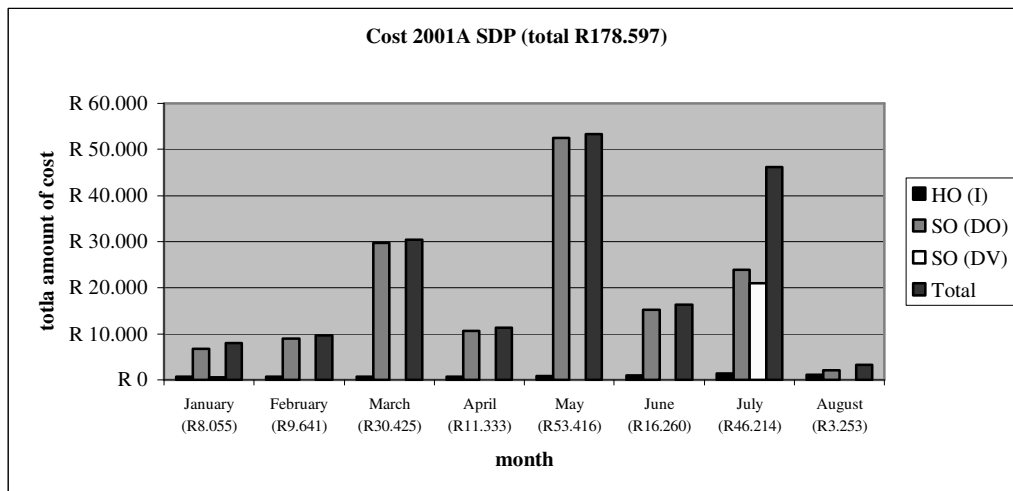
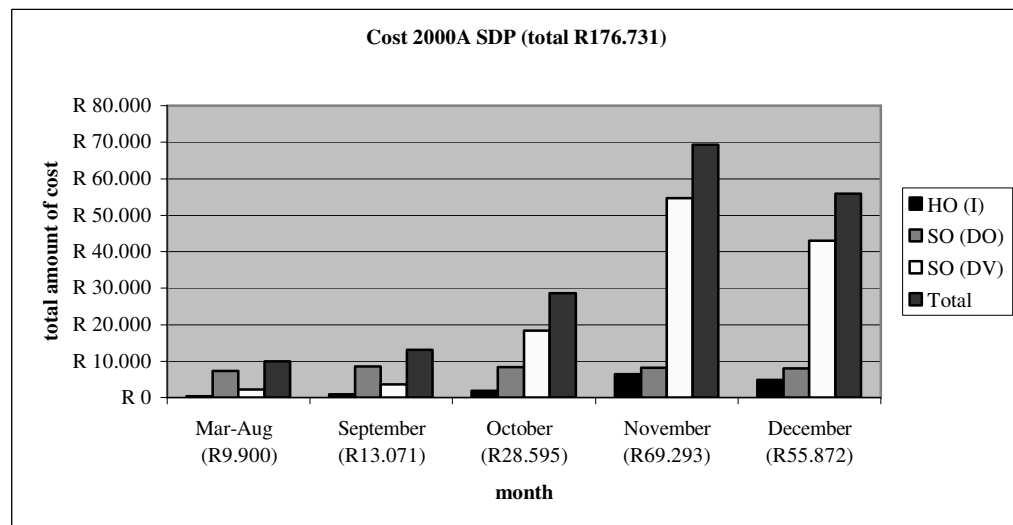
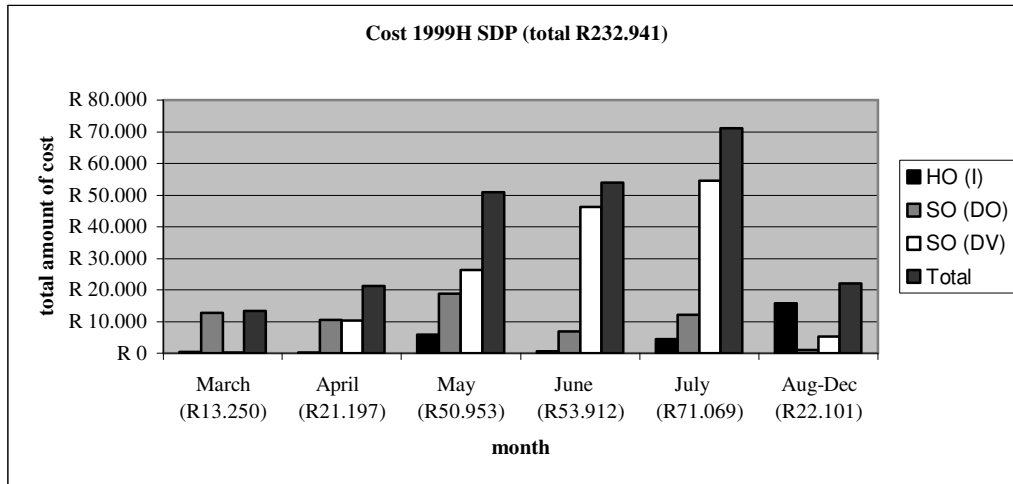
7.1.3 Period 2001A

7.1.4 Period 2001H

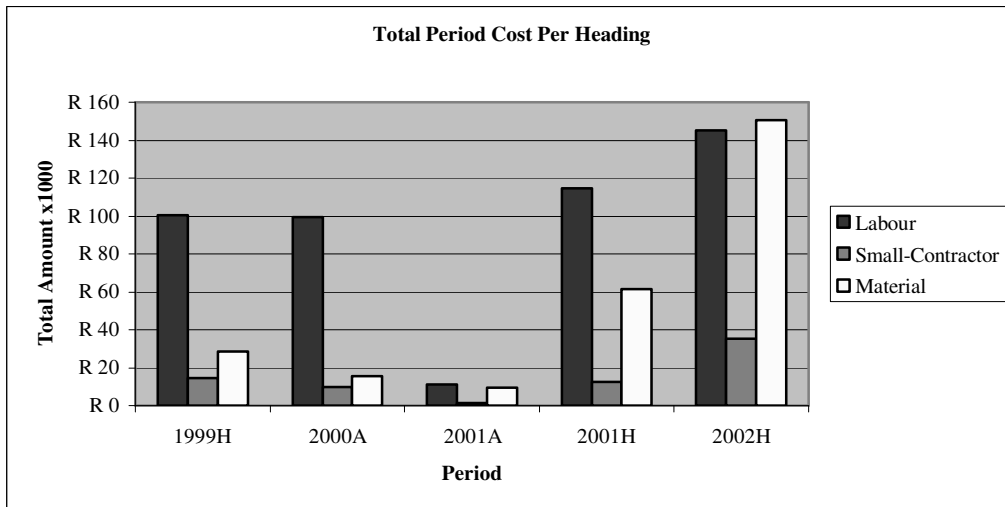
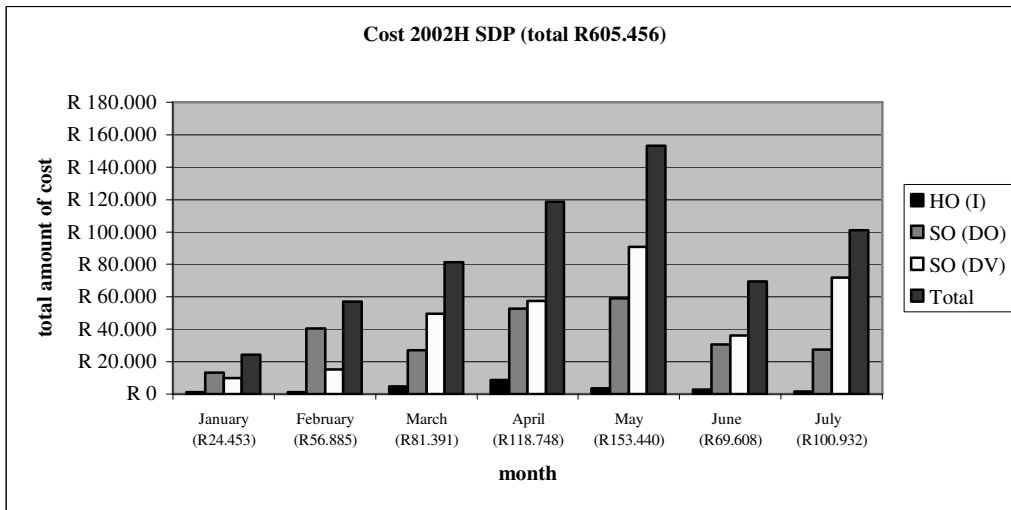
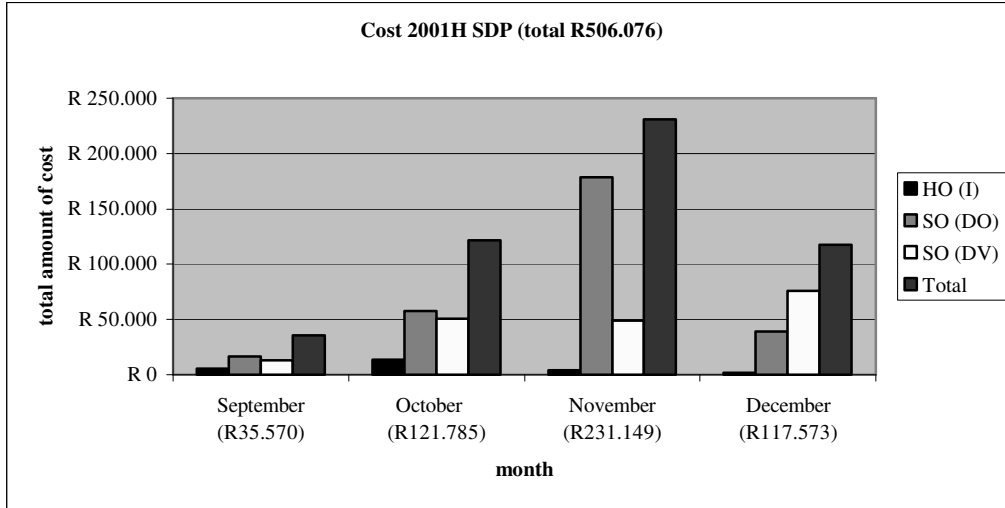
7.1.5 Period 2002H

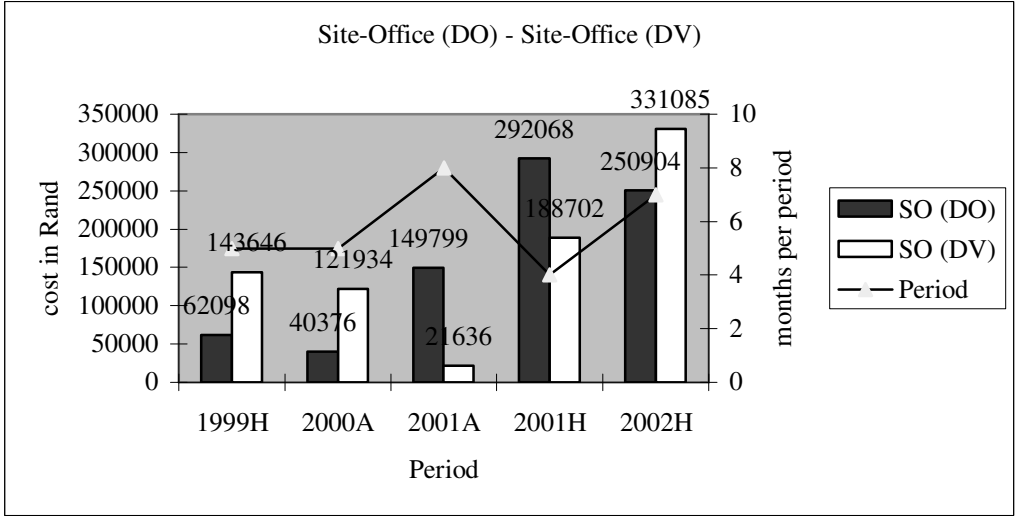
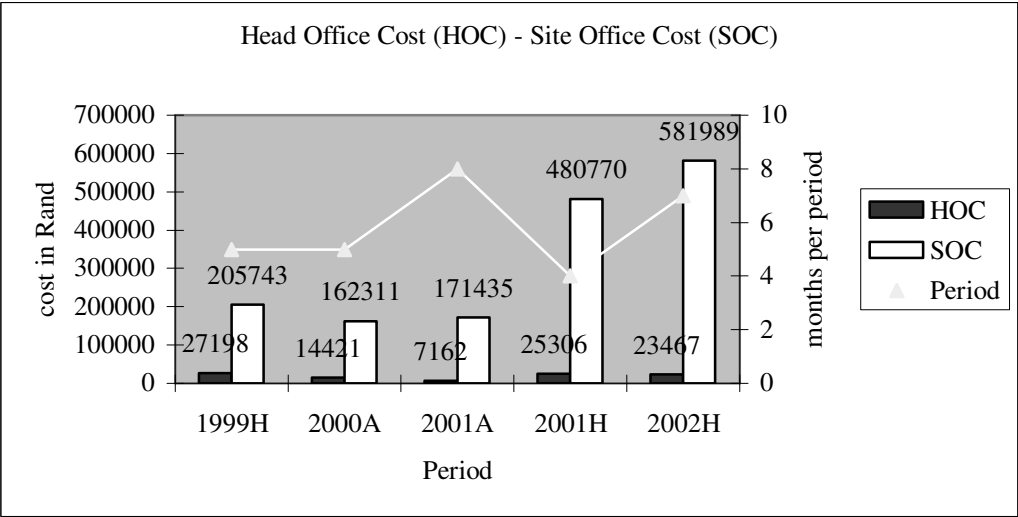
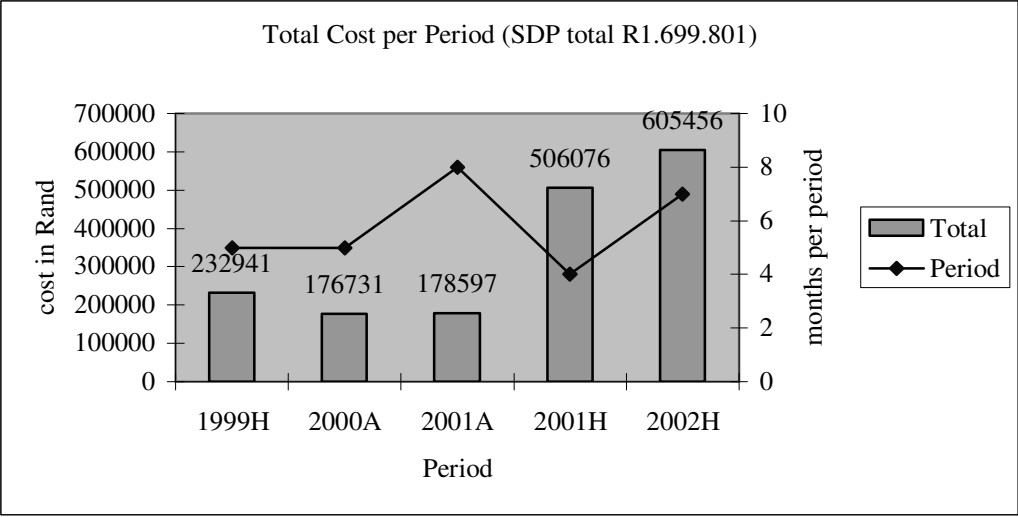
⁸⁰ Based on financial records obtained from Executive Director, B. Donaldson

7.2 Period Cost Graphics⁸¹



⁸¹ Head Office (HO) Indirect (I); Site Office (SO) Direct Overhead (DO); Direct Variable (DV) Head Office Cost (HOC); Site Office Cost (SOC)





7.3 Sunk Cost⁸²

Table K: Plant and Machinery

Item	Amount	Cost	
Tools			R 13 854
Grinder	1	R 1 563	
Generator	1	R 7 296	
Drill	1	R 2 508	
Steel Cutter	1	R 1 230	
Chain Block	1	R 1 257	
Setting-out and Control			R 37 808
Level with Tripods	2	R 8 436	
Theodolite	1	R 14 793	
Measuring Wheel with staff	1	R 1 185	
Scaffolding (Bridge)	1	R 8 233	
Dynamic Cone Penetrometer	1	R 2 226	
Concrete Cube Moulds	3	R 1 404	
Concrete Troughs	3	R 1 531	
Plant			R 74 741
Hand Operated Block Press	2	R 7 289	
Hand Stone Crusher	2	R 20 632	
Hand Concrete Mixer	6	R 20 850	
Tower Sieve	3	R 23 250	
Screen Sieve	2	R 1 200	
Treadle Pump	1	R 1 520	
Machinery			R 91 744
Plate Compactors	2	R 27 420	
Hand Pad-Foot Roller	1	R 64 324	
Total			R 218 147

Table L: Vehicles and Transport

Item	Amount	Cost	
Vehicles			R 92 881
2 Litre Bakkie	1	R 54 931	
1.4 Litre Bakkie	1	R 36 010	
Bicycles	4	R 1 940	
Transport			R 102 875
High-speed trailer (Roller)	1	R 19 038	
Low-speed trailer (Tractor, 2.4m3)	2	R 31 780	
Donkey-cart (1/2m3)	5	R 32 060	
Donkey-cart (1000 Litre tanks)	2	R 19 997	
Total			R 195 756
Total Sunk Cost		R 218 147 + R 195 756	R 413 903

⁸² Information gathered from cash-book, Executive Director LITE

Appendix 8 Stakeholders Analysis

8.1 Stakeholders

8.1.1 Labour Intensive Training and Engineering LITE

In understanding the definition of labour-intensive construction, not much has to be added to explain the objectives of LITE; they are basically “all in the name”.

LITE was established in November this year (2000) as a non-profit section 21 company, and is intended to induce development and alleviate poverty by using labour-intensive techniques. The company is dedicated to:

- Empower local people by training them in basic technical and managerial skills.
- Improve the physical structure of rural areas (roads, storm water drainage and water supply).
- Fuel the local economy as much as possible through the wage bill and local purchase of required materials as a substantial part of the construction costs.

As has been proven many times, without a proper infrastructure, sustainable development in a certain area is practically impossible. Therefore LITE has chosen the construction sector to be the medium in getting development started. The approach is double edged;

- Roads, water supply and sanitation will be upgraded. This will attract more business.
- A selection of the local population will develop some skills in construction and hopefully the trained people can set up businesses for themselves after the training and experience gained.

8.1.1.1 Role of LITE in the Development Project

LITE fulfils the roles of engineer, project manager and contractor, directly employing labour and providing construction resources. Projects are executed as part of a long-term programme following analysis, training and pilot project phases. This option, also referred to as In-house construction, corresponds to the Public Sector Works Programme.

LITE will function as trainer, project manager, designer and programmer. In the construction phase of subprojects, the company will primarily act as the link between the client and the workforce. Through its role as project manager, LITE will carry out the projects in a labour-intensive manner based on professional knowledge and extensive experience. However, the costs of construction (wages, materials, insurance's etc.), supervision and training could be paid through LITE or, alternatively, directly by the sponsors, particularly when the project reaches a stage that the government is the principal sponsor. LITE will arrange the necessary insurance (for example workmen's compensation and contractor's all risks), buy materials, and perform all the functions needed for the development project to go ahead successfully.

8.1.2 Research Centre for Employment Creation in Construction WORK

The Research Centre for Employment Creation in Construction (WORK) was established in 1992 within the Department of Civil Engineering of the University of the Witwatersrand. The purpose of the Centre was to create a multi-disciplinary forum for research into all matters pertaining to increase employment levels in construction activities. Professor Robert McCutcheon, who has long experience of labour-intensive construction and its management with the International Labour Organisation (ILO), leads the Research Centre. With the ILO, the Professor has been involved in the establishment of national labour-based road construction programmes in Kenya, Malawi, Botswana, Lesotho and Zambia.

8.1.2.1 Role of WORK in the Sekhukhuland Development Programme

The Research Centre is dedicated to continue its support to the projects in Mhlaletse and to expand the project to the surrounding villages up to and including those around the Atok mine until such time has come that it becomes strong enough to be taken over by government. The Research Centre will supply LITE with its knowledge of labour-intensive construction and students assisting in the design and management of the subprojects.

8.1.3 Employment Intensive Engineering Consultants EIEC

The Employment Intensive Engineering Consultants (EIEC) was established in 1996 by Prof. R.T. McCutcheon and Mr. J. Croswell, and has been operating from James Croswell Associates since. EIEC has been involved in the SDP right from the start. Prof. R.T. McCutcheon together with Mr James Croswell, have travelled recently to both Namibia and Egypt to advice on employment creation and on the use of small contractors in road construction.

8.1.3.1 Role of EIEC in the Sekhukhuneland Development Programme

The primary function of the EIEC has been as a consultant to LITE and to the SDP. Most of the decisions taking in the SDP which have major concern to the SDP go through the EIEC. Project decisions are taking on site if the financial implication is not reaching an amount between R5.000, - and R10.000, - or over this range. Major decisions on the construction are always run through the EIEC. This results in a safety that the site operation can not make major mistakes which can result into construction failure without the possibility of knowing that this could happen by Head Office.

8.1.4 Donaldson Trust

It is because of the lack of capacity of the previous government that the Donaldson Trust is determined to assist the affected communities in and around the village of Mohlaletse, Sekhukhuneland⁸³. The Trust also believes that, because Mohlaletse is the capital of Sekhukhuneland, any assistance given to it would later, through a programme, be transferred into the surrounding areas.

The initial sponsor and instigator of the development of engineering services in the village of Mohlaletsi is the Donaldson Trust. The trust was founded in 1936. The expressed purpose of the Trust is:

The advancement of status, improvement of the conditions and the removal of the disabilities suffered by the African population of the Republic of South Africa and generally to seek their benefit and betterment.

Initiatives to date include:

- Co-operation with Operation Hunger in the establishment of vegetable gardens together with the provision of hand water pumps;
- The training of St Johns Home Care workers, who are now linked to the provincial clinic at Mohlaletse;
- The “18 Schools Project”, which coached teachers and obtained closer co-operation of parents through their involvement in the School Governing Bodies. One of the schools, Mohlaletse High School, obtained 100% metric pass rate in 1999. The Regional Schools Inspector at Apel believes that improvement in morale amongst teachers had a definite ripple effect in the surrounding area.

8.1.4.1 Role of the Trust in the Sekhukhuneland Development Programme

The Donaldson Trust has allocated further funds to continue financing the project at the same rate for the next three years, but is looking for funding for the balance of the finance. If the project is strong at the Atok mine as well as at Mohlaletse, then as it spreads out from the one, it will not lose momentum because it will be getting closer to the other. The more funds that can be made available through partnerships, the more villages can be included in the development scheme.

8.1.5 Anglo Platinum

The Anglo Platinum Atok mine was approached by the Donaldson Trust and indicated that is was prepared to support the project and voted R600 000 towards it. In order that the whole project could be run through a separate independent entity, the has formed LITE, which is now committed to assist in the reconstruction and drainage works on the road from the Atok mine (end of tar road) to the village of Monametse, using local labour and road builders which LITE will have put through a training course prior to construction. A potential follow-up project is the re-construction of the damaged embankment to the narrow bridge on the

⁸³ President T. Mombeki has designated Sekhukhuneland as one of the prime areas of interest by the South Africa government.

provincial gravel road from Atok towards Burgersfort. The bridge is about 1 km from the mine offices. Other works still have to be identified together with mine management.

8.1.5.1 Role of Anglo Platinum in the Development Project

The mine will be one of the major clients and sponsors of the project. Projects will be executed by LITE throughout the Atok area and LITE will also provide the training programme required before construction starts. In exchange the mine has agreed to extend its funding and support to the other projects to be executed.

8.1.6 Umsobomvu Youth Fund (UYF)

Umsobomvu Youth Fund was established in January 2001 by the South African government, and mandated to facilitate and promote the creation of jobs and skills development and transfer among young South Africa (ages 18 to 35). UYF was funded through the proceeds from the Demutualization Lavy Act of 1998, and fulfils its mandate by making strategic investments that facilitate opportunities for young people to acquire skills, to access job opportunities or pursue meaningful self-employment opportunities through various enterprise initiatives.

UYF's strategy is build around four key areas of intervention: to conceptualise and design programmes; to outsource the implementation of these programmes to service providers; to support and work with youth initiatives; and to support capacity building for service providers. UYF's strategic objectives, which inform its operational priorities, includes: achieving affectiveness; intergrated business and programmes and achieving scale. During September 2001 Umsobomvu opened talks with LITE about a Youth Service Programme in the Sekhukhuneland area. This resulted in the Mohlaletse Youth Service Programme that was started during April 2002.

8.1.6.1 Role of Umsobomvu Youth Fund the Development Project

The funding of the Mohlaletse Youth Servcie Programme (MYSP) is done through the Umsobomvu Youth Fund. This programme was a spin-of of the Sekhukhuneland Development Programme (SDP). During the SDP the UYF funded the building of the LITE-School. This building, which had to be completed by September 2002, had a budget of R 110 000. The school was completed during September 2002 as part of the training done within the MYSP.

8.1.7 Apel Transitional Local Council (TLC)

The main aim of the development project is to draw government's attention for labour-intensive construction. Bad management has often been the reason of failure of 'labour-intensive projects', thereby giving a bad reputation to this construction technique. The TLC of Apel is dedicated to development and is willing to support LITE. Cooperation with the TLC can turn out to be a major milestone in reaching the objectives of the project.

8.1.7.1 Role of the Apel TLC in the Development Project

As an important governmental organisation, the Apel TLC will take up the role as the second important client. The basic agreement between LITE and the TLC is that LITE will carry out construction projects in the Mohlaletse-Apel area in a labour-intensive manner (LITE will be the supplier of knowledge) and that the TLC will take care of the costs (TLC will be the supplier of funds) and also support the training programme. Detailed arrangements have not yet been made.

8.1.8 Surrounding villages

With support of the government eventually labour-intensive construction methods can be applied throughout the country. This will undoubtedly take some time, but expanding the project into the villages between Mohlaletse and Atok will be the first step in this direction. Most of the Kghosis of the villages around Mohlaletse have been visited and a global assessment is made for these villages, including the gravel road from Atok towards Monametse. Works anticipated include access roads and drainage, and the upgrading of water supply.

8.1.9 The people of Mhlaletse

Mhlaletse is situated 20 km due south of the Atok mine in the heart of Sekhukhuneland. The village chief, K.K. Sekhukhune, is the Paramount Chief⁸⁴ of the Bapedi and enjoys widespread support, not only within the confines of Sekhukhuneland but also amongst the migrant Bapedi workers in Gauteng and in various other centres of employment. This support was greatly enhanced by his successful opposition to the old Homeland government of Lebowa. The opposition cost his people dearly in that Mhlaletse and the region around it were deliberately marginalized in terms of financial assistance from the government. Role of

8.1.9.1 Mhlaletse in the Development Project

Mhlaletse will accommodate the Training Centre and projects will be in progress there throughout the coming years. The degrees to which the projects expand depend on their success and the degree to which they can attract donor support and ultimately full government participation.

8.1.10 Development Committee

This has been the replacement committee in the Mhlaletse village for the Road Committee. The Development Committee has 10 committees, which have all a specific group as focus.

8.1.10.1 Role of the Development Committee on the SDP

This committee has the role as a client; it will have to be consulted with every new decision taken in the SDP. They have the capability to block every development in the SDP if they want.

8.1.11 Suppliers

Because LITE operates under the idea that it wants to spend as much money into the local community as possible. The idea behind this idea is that these suppliers will employ local people to operate the shops, so to leave as much capital into the region of operation.

Because of this three supplier-types are identified namely:

- Johannesburg: Suppliers based in Johannesburg, Gauteng Province.
- Region: Suppliers based in a range beyond the local area but less Johannesburg.
- Local Area: Suppliers based in the direct area of operation.

8.1.12 Sub-Contractor

The SDP has used sub-contractors in two different occasions but has not yet developed the next phase of the training programme component of the SDP.

The following sub-contractor types are identified:

- Bulk sub-contractors; these are used to assist the project in moving materials used in the construction. These groups can make use of equipment owned by LITE, this to allow quality checks on delivery of quantities and to make it possible to reach a larger group, and narrow the reliance issue of delivery.
- Once off sub-contractors; these are used to assist the project in delivering a particular job, which has specific specifications⁸⁵. This group can also use equipment from LITE against a down payment of rent.

8.1.13 Work Force

The work force selected from the community consists out of two types.

Team Leader

This group has had a training course that focused on the capacity of the selected trainees to reach the status of team leader. Main areas of the course concern are Labour Intensive Construction Skills, Mathematics and English, First Aid and Life Skills. Through examinations on these subjects the trainee will eventually reach the team leader status. During this training period the trainee will follow a course which has a combination of theory and practice, this to allow the trainee to implement and apply the learned theory in practise. This means that during the training phase this group will already start the construction.

⁸⁴ Officially recognised by the South Africa Government in 2002

⁸⁵ Welding, plumbing or similar jobs.

Labour

When the first phase of the training course⁸⁶ is finished a small amount of labour is fed into the construction project. This is then enlarged at the rate of the capability of the team leaders involved. These labourers will consist out-off a fifty-fifty split between selected man-woman ratio. The selection will take place on a lottery-based system for man and woman, this to make the selection as neutral as possible. To allow a so large spread among the community a system of household-based supply is used to select these labourers.

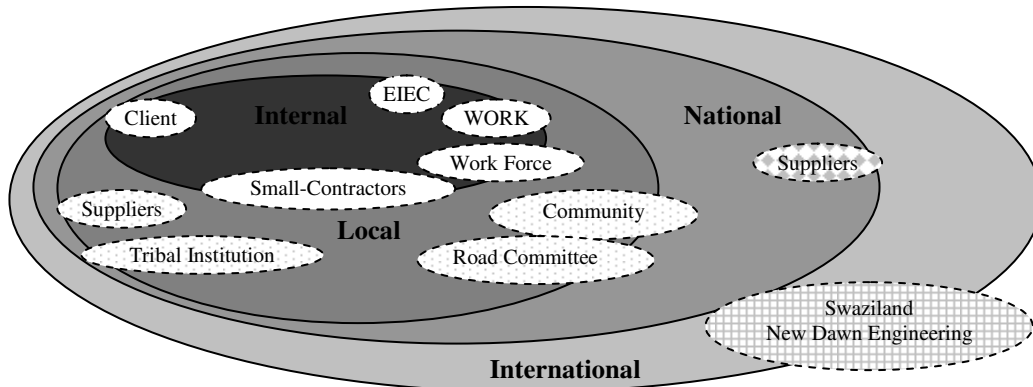
⁸⁶ This course will consist of several phases to allow evolve the person into a qualified team leader of considerable quality and able to perform well on different construction types.

8.2 Institutional Setting

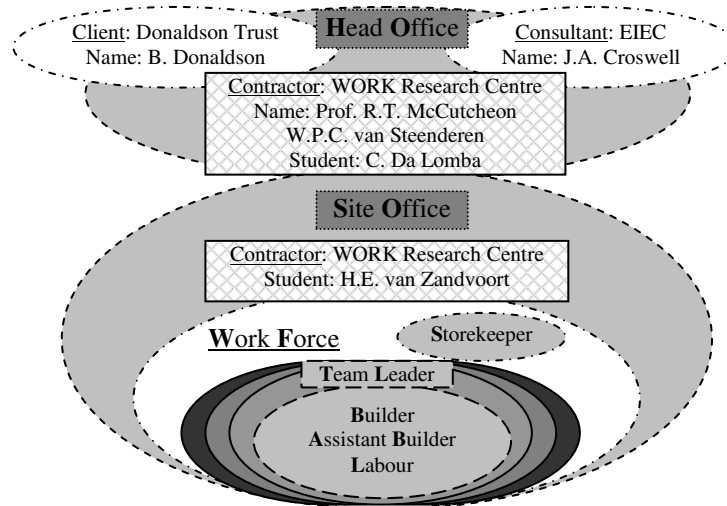
8.2.1 Period Setting 1999H

1998 (September) – 2000 (September)		
Contractor WORK	Consultant EIEC	Research Centre WORK
<u>J.A. Croswell</u> <u>R.T. McCutcheon</u> <u>B.J. Donaldson</u> <u>W.P. van Steenderen</u> H.E. van Zandvoort <u>C. Da Lomba</u>	<u>J.A. Croswell</u> <u>R.T. McCutcheon</u>	<u>R.T. McCutcheon</u> F. Taylor Parkins W.P. van Steederen Students
Directors Working at Head-Office Working at Site-Office	Directors	Director Research Fellows

8.2.1.1 Sekhukhuneland Development Programme Setting 1999H



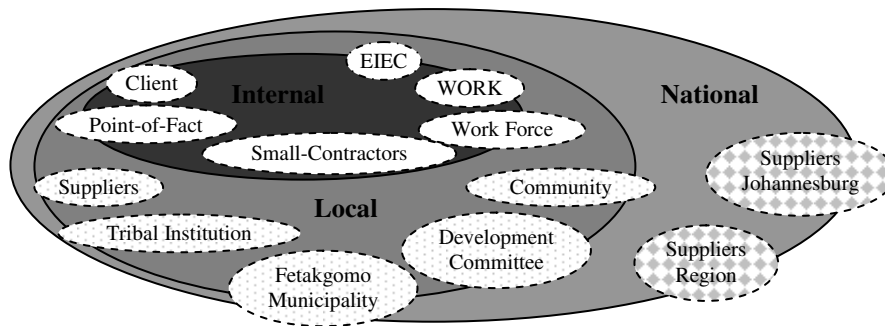
8.2.1.2 Project Structure



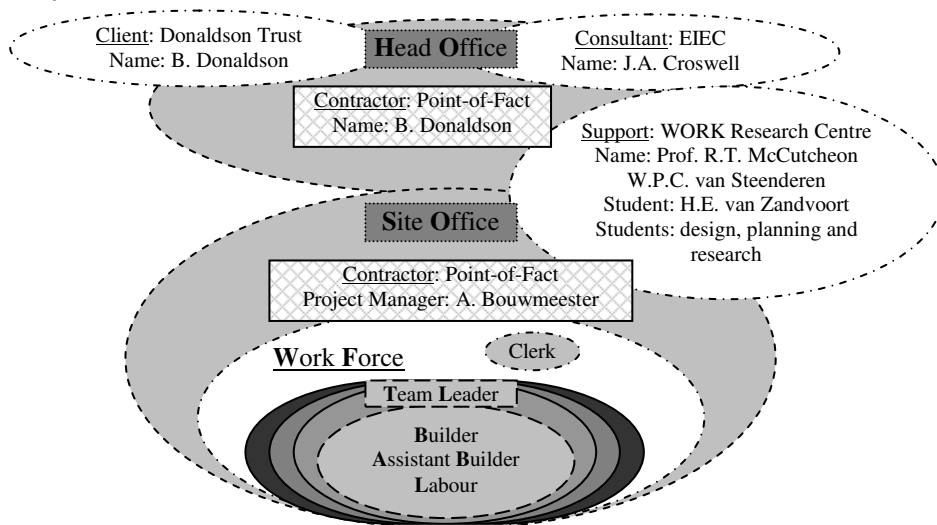
8.2.2 Period Setting 2000A

2000 (September) – 2001 (September)		
Contractor Point a Fact/LITE	Consultant EIEC	Research Centre WORK
<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> <i>B.J. Donaldson</i> <i>W.P. van Steenderen</i> <i>M.P. Sekwati</i> <i>K.K. Sekhukhune</i> <i>H.M. Morwamoche</i> A. Bouwmeester H.E. van Zandvoort Students	<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> F. Taylor Parkins	<i>R.T. McCutcheon</i> F. Taylor Parkins W.P. van Steenderen M. Lieuw Kie Song H. Quainoo Students
<i>Directors</i> <u>Working at Head-Office</u> <u>Working at Site-Office</u>	<i>Directors</i> Assistant	<i>Director</i> Research Fellows

8.2.2.1 *Sekhukhuneland Development Programme Setting 2000A*



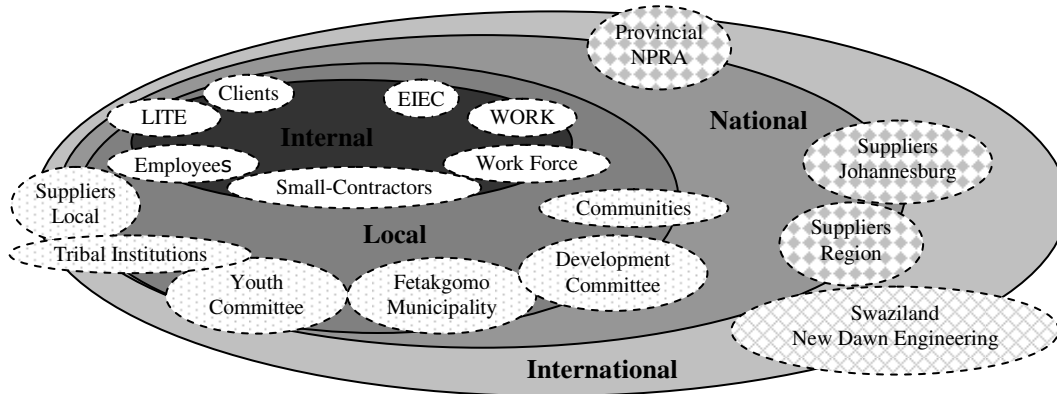
8.2.2.2 *Project Structure*



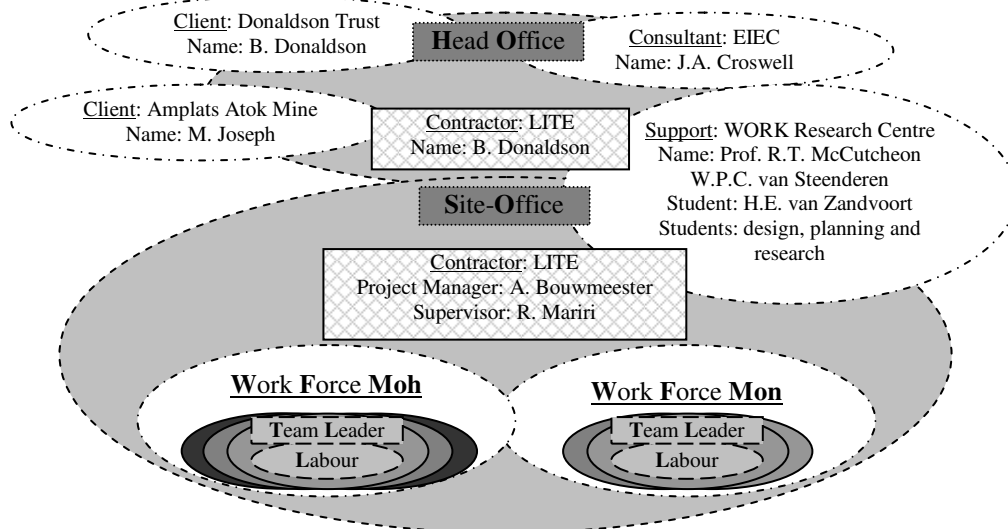
8.2.3 Period Setting 2001A

2000(September) – 2001(September)		
Contractor Point a Fact/LITE	Consultant EIEC	Research Centre WORK
<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> <i>B.J. Donaldson</i> <i>W.P. van Steenderen</i> <i>M.P. Sekwati</i> <i>K.K. Sekhukhune</i> <i>H.M. Morwamoche</i> A. Bouwmeester H.E. van Zandvoort Students	<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> F. Taylor Parkins	<i>R.T. McCutcheon</i> F. Taylor Parkins W.P. van Steederen M. Lieuw Kie Song H. Quainoo Students
<i>Directors</i> Working at Head-Office Working at Site-Office	<i>Directors</i> Assistant	<i>Director</i> Research Fellows

8.2.3.1 Sekhukhuneland Development Programme Setting 2001A



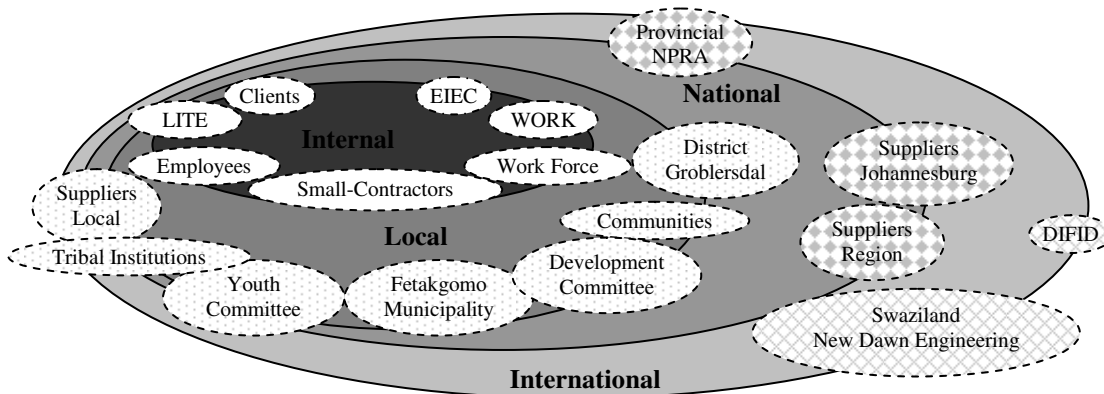
8.2.3.2 Project Structure



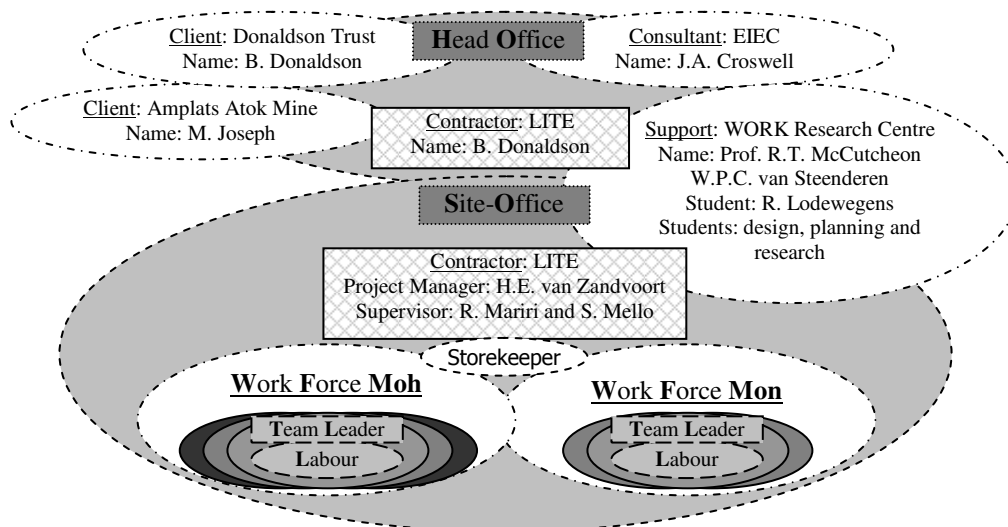
8.2.4 Period Setting 2001H

Net-WORK 2001 (September) – 2001 (December)		
Contractor LITE	Consultant EIEC	Research Centre WORK
<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> <i>B.J. Donaldson</i> <i>W.P. van Steenderen</i> <i>M.P. Sekwati</i> <i>K.K. Sekhukhune</i> <i>H.M. Morwamoche</i> H.E. van Zandvoort Supervisors Students	<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> F. Taylor Parkins	<i>R.T. McCutcheon</i> F. Taylor Parkins W.P. van Steenderen M. Lieuw Kie Song H. Quainoo Students
<i>Directors</i> <u>Working at Head-Office</u> Working at Site-Office	<i>Directors</i> Assistant	Director Research Fellows

8.2.4.1 Sekhukhuneland Development Programme Setting 2001H



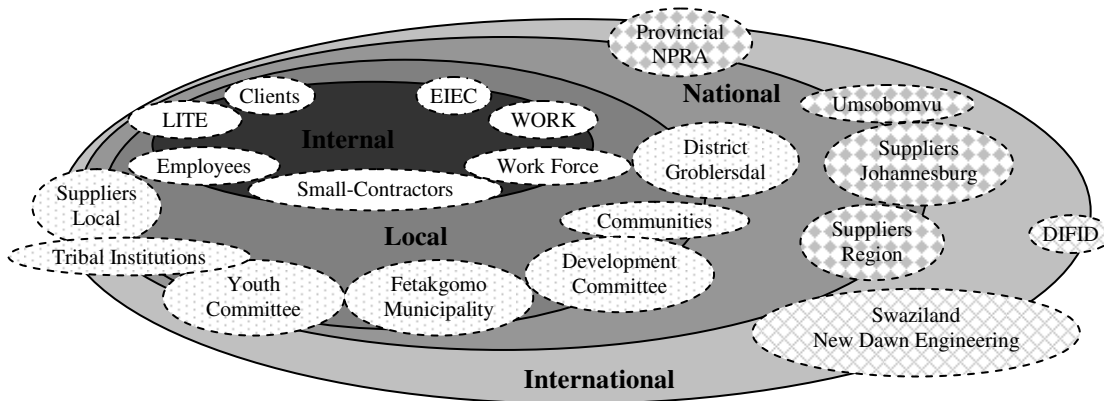
8.2.4.2 Project Structure



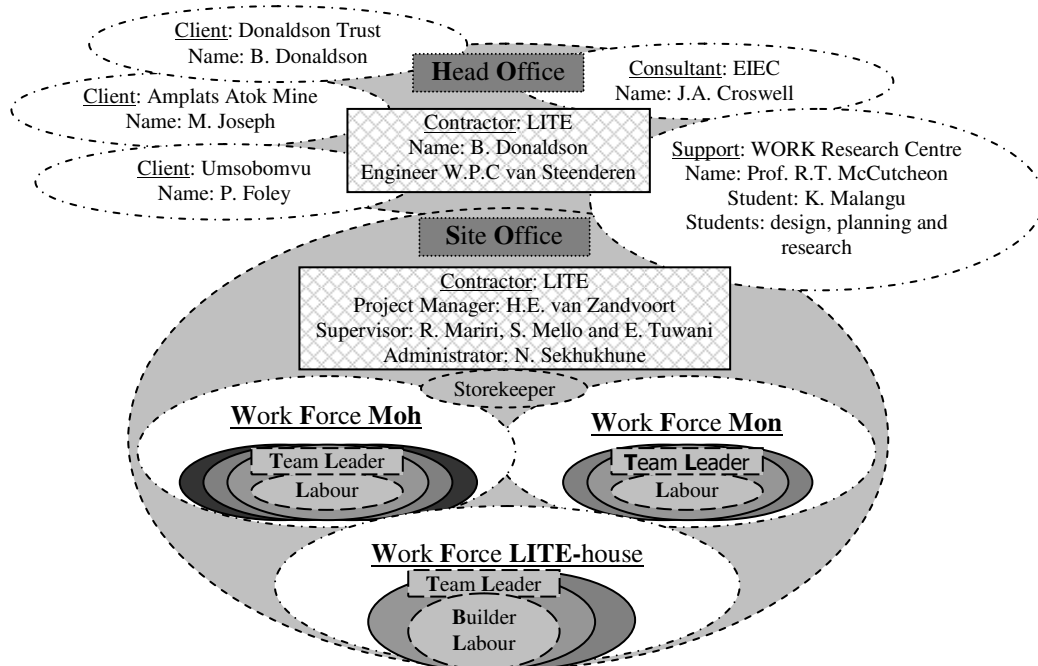
8.2.5 Programme Team Setting 2002H

Net-WORK 2002 (January) – 2002 (September)		
Contractor LITE	Consultant EIEC	Research Centre WORK
<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> <i>B.J. Donaldson</i> <u>W.P. van Steenderen</u> <i>M.P. Sekwati</i> <i>K.K. Sekhukhune</i> <i>H.M. Morwamoche</i> H.E. van Zandvoort W. Tichler Students	<i>J.A. Croswell</i> <i>R.T. McCutcheon</i> F. Taylor Parkins	<i>R.T. McCutcheon</i> F. Taylor Parkins W.P. van Steenderen M. Lieuw Kie Song H. Quainoo Students
<i>Directors</i> <u>Working at Head-Office</u> <u>Working at Site-Office</u>	<i>Directors</i> Assistant	<i>Director</i> Research Fellows

8.2.5.1 *Sekhukhuneland Development Programme Setting 2002H*



8.2.5.2 *Project Structure*



8.3 Stakeholder Analysis

8.3.1 Stakeholders Interest and Impact on Period 1999H

Stakeholders Period 1999H			
<u>Internal</u>			<u>Local</u>
1. Work Force Team Leaders	P		10. Mohlaletse Community P
2. Work Force Builders	P		11. Mohlaletse Road Committee S
3. Work Force Assistant Builders	P		12. Mohlaletse Tribal Institution S
4. Work Force Labourers	P		13. Suppliers Local E
5. Sub-Contractors Bulk	P		<u>National</u>
6. Sub-Contractors Once-Off	P		14. Suppliers National E
7. Client Donaldson Trust	S		<u>International</u>
8. Contractor Research Centre WORK	S		15. Supplier Swaziland New Dawn Eng. E
9. Consultant EIEC	S		

Stakeholder Table Period 1999H			
Stakeholder Type	Interest	PPI ⁸⁷	RPoI ⁸⁸
Secondary (S)			
C) Client Donaldson Trust	Experience, Image and Success	+,+/-	1
D) Contractor Research Centre Work	Experience, Research, Data and Success	+,+,+,+	1
E) Consultant EIEC	Experience, Data and Success	+,+,+	2
G) Mohlaletse Road Committee	Experience, Status and Image	-,-	2
H) Mohlaletse Tribal Institution	Status and Image	+,+	4
Primary (P)			
A) Group Work Force	Income, Experience and Status	-,+,-	1
B) Group Sub-Contractors	Income and Status	-,-	3
F) Mohlaletse Community	Infrastructure, Income, Experience and Status	-,-,+,+	1
External (E)			
I) Group Suppliers	Profit, Sales Volume and Status	-,+,-	3

Period 1999H Matrix Classification			
High	High Importance	Low	Stakeholders
Influence	<u>B</u> : C,D,E,G	<u>C</u> : H	Secondary: C, D, E, G, H Primary: A, B, F External: I
	<u>A</u> : A,B,F	<u>D</u> : I	
Low			

Summary Participation Matrix Period 1999H				
Type of participation	Inform	Consult	Partnership	Control
Stage in Project Cycle				
Identification		H	C,D,E,G	C,F
Planning	I,H,A,B	F,G	D,E	C,F
Implementation	H	A,B,F	D,E,G	C,F
Monitoring and Evaluation		A,B,F,G,H,I	D,E	C,F

⁸⁷ Potential Project Impact

⁸⁸ Relative Priorities of Interest

8.3.2 Stakeholders Interest and Impact on Period 2000A

Stakeholders Period 2000A			
<u>Internal</u>			<u>Local</u>
1. Work Force Team Leaders	P		11. Mhaleletse Community P
2. Work Force Builders	P		12. Mhaleletse Development Committee S
3. Work Force Assistant Builders	P		13. Mhaleletse Tribal Institution S
4. Work Force Labourers	P		14. Fetakgomo Municipality E
5. Sub-Contractors Bulk	P		15. Suppliers Local E
6. Sub-Contractors Once-Off	P		<u>National</u>
7. Client Donaldson Trust	S		16. Suppliers Region E
8. Contractor Point-a-Fact	S		17. Suppliers National E
9. Support Research Centre WORK	S		
10. Consultant EIEC	S		

Stakeholder Table Period 2000A			
Stakeholder Type	Interest	PPI ⁸⁹	RPI ⁹⁰
Secondary (S)			
C) Client Donaldson Trust	Experience, Goals and Success	+,+/-	1
D) Contractor Point-a-Fact	Experience, Contacts, Data and Success	+,+,+,+	1
E) Support Research Centre Work	Experience, Research, Data and Success	+,+,+,+	2
F) Consultant EIEC	Experience, Data and Success	+,+,+	2
H) Mhaleletse Development Committee	Experience, Status and Public Image	-,-	2
I) Mhaleletse Tribal Institution	Status and Public Image	+,+	4
Primary (P)			
A) Work Force	Income, Experience and Status	-,-,-	1
B) Sub-Contractors	Income and Status	-,-	3
G) Community Mhaleletse	Infrastructure, Income, Experience and Status	+,+,-,-	1
External (E)			
J) Fetakgomo Municipality	Contracts, Interest, Image, Influence	+,+,-,-	4
K) Suppliers	Profit, Sales Volume and Image	-,-,+,+	3

Period 2000A Matrix Classification			
High	High	Importance	Low
Influence	B: C,D,E,F,H	C: I	Stakeholders Secondary: C, D, E, F, H, I Primary: A, B, G External: J, K
	A: A,B,G	D: J,K	
Low			

Summary Participation Matrix Period 2000A				
Type of participation	Inform	Consult	Partnership	Control
Stage in Project Cycle				
Identification		G,I	C,D,E,F,H	C,G
Planning	A,B,I,J,K	G,H	D,E,F	C,G
Implementation	J	A,B,I	D,E,F,H	C,G
Monitoring and Evaluation		A,B,G,H,I,K	D,E,F	C,G

⁸⁹ Potential Project Impact

⁹⁰ Relative Priorities of Interest

8.3.3 Stakeholders Interest and Impact on Period 2001A

Stakeholders Period 2001A			
<u>Internal</u>			<u>Local</u>
1.	Work Force Trainees Mohlaletse	P	12. Mohlaletse Community
2.	Work Force Labourers Mohlaletse	P	13. Monametse Community
3.	Work Force Trainees Monametse	P	14. Mohlaletse Development Committee
4.	Work Force Labourers Monametse	P	15. Monametse Youth Committee
5.	Sub-Contractors Bulk	P	16. Mohlaletse Tribal Institution
6.	Sub-Contractors Once-Off	P	17. Monametse Tribal Institution
7.	Client Donaldson Trust	S	18. Fetakgomo Municipality
8.	Client Anglo Platinum Atok	S	19. Suppliers Local
9.	Contractor LITE	S	<u>National</u>
10.	Support Research Centre WORK	S	20. Provincial NPRA
11.	Consultant EIEC	S	21. Suppliers Regional
			22. Suppliers National

Stakeholder Table Period 2001A			
Stakeholder Type	Interest	PPI ⁹¹	RPOI ⁹²
Secondary (S)			
D) Client Donaldson Trust	Experience, Goals and Success	+,+,+	1
E) Client Anglo Platinum	Experience, Goals and Success	+,+,+	1
F) Contractor LITE	Experience, Contacts, Data and Success	+,+,+,+	1
G) Support Research Centre Work	Experience, Research, Data and Success	+,+,+,+	2
H) Consultant EIEC	Experience, Data and Success	+,+,+	2
K) Mohlaletse Road Committee	Experience, Status and Image	-,-,-	2
L) Monametse Youth Committee	Experience, Status and Image	-,-,-	2
M) Mohlaletse Tribal Institution	Status and Image	+,+	4
N) Monametse Tribal Institution	Status and Image	+,+	4
Primary (P)			
A) Work Force Mohlaletse	Income, Experience and Status	-,-,-	1
B) Work Force Monametse	Income, Experience and Status	-,-,-	1
C) Sub-Contractors	Income and Status	-,-	3
I) Mohlaletse Community	Infrastructure, Income, Experience and Status	-,-,-,-	1
J) Monametse Community	Infrastructure, Income, Experience and Status	-,-,-,-	1
External (E)			
O) Fetakgomo Municipality	Contracts, Interest, Image, Influence	+,+,-,-	4
P) Provincial NPRA	Contacts, Interest, Image, Influence	+,+,-,-	4
Q) Suppliers	Profit, Sales Volume and Image	-,-,+,+	3

Period 2001A Matrix Classification			
High	High	Importance	Low
Influence	B: D,E,F,G,H, K,L	C: M,N	Stakeholders
Low	A: A,B,C,I,J	D: O,P,Q	Secondary: D, E, F, G, H, K, L, M, N Primary: A, B, C, I, J External: O, P, Q

Summary Participation Matrix Period 2001A				
Type of participation	Inform	Consult	Partnership	Control
Stage in Project Cycle				
Identification		I,J,M,N	D,E,F,G,H,K,L	D,E,I,J
Planning	A,B,C,M,N,Q,O,P	I,J,K,L	F,G,H	D,E,I,J
Implementation	M,N	A,B,C,I,J	F,G,H,M,N	D,E,I,J
Monitoring and Evaluation		A,B,C,I,J,K,L,M,N	F,G,H	D,E,I,J

⁹¹ Potential Project Impact

⁹² Relative Priorities of Interest

8.3.4 Stakeholders Interest and Impact on Period 2001H

Stakeholders Period 2001H			
<u>Internal</u>			<u>Local</u>
1. Work Force Team Leaders	P		13. Mhlaletse Community P
2. Work Force Labourers	P		14. Monametse Community P
3. Work Force Builders	P		15. Mhlaletse Development Committee S
4. Work Force Team Leaders	P		16. Monametse Youth Committee S
5. Work Force Labourers	P		17. Mhlaletse Tribal Institution S
6. Sub-Contractors Bulk	p		18. Monametse Tribal Institution S
7. Sub-Contractors Once-Off	p		19. Fetakgomo Municipality E
8. Client Donaldson Trust	S		20. Suppliers Local E
9. Client Anglo Platinum Atok	S		<u>National</u>
10. Contractor LITE	S		21. Provincial NPRA E
11. Support Research Centre WORK	S		22. Groblersdal District E
12. Consultant EIEC	S		23. Suppliers Regional E
			24. Suppliers National E
			<u>International</u>
			25. International DIFID E
			26. Supplier New Dawn Eng. E

Stakeholder Table Period 2001H			
Stakeholder Type	Interest	PPI ⁹³	RPol ⁹⁴
Secondary (S)			
D) Client Donaldson Trust	Experience, Goals and Success	+,+/-	1
E) Client Anglo Platinum Atok	Experience, Goals and Success	+,+/-	1
F) Contractor LITE	Experience, Contacts, Data and Success	+,+,+,+	1
G) Support Research Centre Work	Experience, Research, Data and Success	+,+,+,+	2
H) Consultant EIEC	Experience, Data and Success	+,+,+	2
K) Mhlaletse Road Committee	Experience, Status and Public Image	-,-	2
L) Monametse Youth Committee	Experience, Status and Public Image	-,-	2
M) Mhlaletse Tribal Institution	Status and Public Image	+,+	4
N) Monametse Tribal Institution	Status and Public Image	+,+	4
Primary (P)			
A) Work Force Mhlaletse	Income, Experience and Status	-,-,-	1
B) Work Force Monametse	Income, Experience and Status	-,-,-	1
C) Sub-Contractors	Income and Status	-,-	3
I) Mhlaletse Community	Infrastructure, Income, Experience and Status	-,-,-,-	1
J) Monametse Community	Infrastructure, Income, Experience and Status	-,-,-,-	1
External (E)			
O) Fetakgomo Municipality	Contracts, Interest, Image, Influence	+,+,-,-	4
P) Provincial NPRA	Contracts, Interest, Image and Influence	+,+,-,-	4
Q) Groblersdal District	Contracts, Interest, Image, Influence	+,+,-,-	4
R) International DIFID	Contracts, Interest, Information	+,+,+	4
S) Suppliers	Profit, Sales Volume and Image	-,-,+	3

Period 2001H Matrix Classification			
High	High	Low	Stakeholders
Influence	B: D,E,F,G,H,K,L	C: M,N	Secondary: D, E, F, G, H, K, L, M, N Primary: A, B, C, I, J
	A: A,B,C,I,J	D: O,P,Q,R,S	External: O, P, Q, R, S
Low			

Summary Participation Matrix Project 2001H				
Type of participation	Inform	Consult	Partnership	Control
Stage in Project Cycle				
Identification		I,J,M,N	D,E,F,G,H,K,L	D,E,I,J
Planning	A,B,C,M,N,O,S	I,J,K,L	F,G,H	D,E,I,J
Implementation	M,N	A,B,C,I,J	F,G,H,K,L	D,E,I,J
Monitoring and Evaluation		A,B,C,I,J,K,L,M,N,S	F,G,H	D,E,I,J

⁹³ Potential Project Impact

⁹⁴ Relative Priorities of Interest

8.3.5 Stakeholders Interest and Impact on Period 2002H

Stakeholders Period 2002H			
<u>Internal</u>			<u>Local</u>
1. Work Force Team Leaders	P	14. Mhlaletse Community	P
2. Work Force Labourers	P	15. Monametse Community	P
3. Work Force Builders	P	16. Mhlaletse Development Committee	S
4. Work Force Team Leaders	P	17. Monametse Youth Committee	S
5. Work Force Labourers	P	18. Mhlaletse Tribal Institution	S
6. Sub-Contractors Bulk	P	19. Monametse Tribal Institution	S
7. Sub-Contractors Once-Off	P	20. Fetakgomo Municipality	E
8. Client Donaldson Trust	S	21. Suppliers Local	E
9. Client Anglo Platinum Atok	S	<u>National</u>	
10. Client Umsobomvu	S	22. Provincial NPRA	E
11. Contractor LITE	S	23. Groblersdal District	E
12. Support Research Centre WORK	S	24. Suppliers Regional	E
13. Consultant EIEC	S	25. Suppliers National	E
		<u>International</u>	
		26. International DIFID	E
		27. Supplier New Dawn Eng.	E

Stakeholder Table Period 2002H			
Stakeholder Type	Interest	PPI ⁹⁵	RPOI ⁹⁶
Secondary (S)			
E) Client Donaldson Trust	Experience, Goals and Objectives of Trust	+,+/-	1
F) Client Anglo Platinum Atok	Experience, Goals and Objectives of Trust	+,+/-	1
G) Client Umsobomvu	Experience, Goals and Objectives of Trust	+,+/-	1
H) Contractor LITE	Experience, Contacts, Data and Information	+,+,+,+	1
I) Support Research Centre Work	Experience, Research, Data and Information	+,+,+,+	2
J) Consultant EIEC	Experience, Data and Information	+,+,+	2
M) Mhlaletse Road Committee	Experience, Status and Public Image	-,-	2
N) Monametse Youth Committee	Experience, Status and Public Image	-,-	2
O) Mhlaletse Tribal Institution	Status and Public Image	+,+	4
P) Monametse Tribal Institution	Status and Public Image	+,+	4
Primary (P)			
A) Work Force Mhlaletse	Income, Experience and Status	-,-,-	1
B) Work Force Monametse	Income, Experience and Status	-,-,-	1
C) Sub-Contractors Mhlaletse	Income and Status	-,-	3
D) Sub-Contractors Monametse	Income and Status	-,-	3
K) Mhlaletse Community	Infrastructure, Income, Experience and Status	-,-,-,-	1
L) Monametse Community	Infrastructure, Income, Experience and Status	-,-,-,-	1
External (E)			
Q) Fetakgomo Municipality	Contracts, Interest, Image, Influence	+,+,-,-	4
R) Provincial NPRA	Contacts, Interest, Image and Influence	+,+,-,-	4
S) Groblersdal District	Contracts, Interest, Image and Influence	+,+,-,-	4
T) International DIFID	Contacts, Interest, Information	+,+,+	4
U) Suppliers New Dawn Eng.	Profit, Sales Volume and Image	-,-,+	3

Period 2002H Matrix Classification			
High	High	Low	Stakeholders
Influence	B: E,F,G,H,I,J, M,N	C: O,P	Secondary: E, F, G, H, I, J, M, N, O, P Primary: A, B, C, D, K, L
	A: A,B,C,D,K,L	D: Q,R,S,T,U	External: Q, R, S, T, U
Low			

Summary Participation Matrix Project 2002H				
Type of participation	Inform	Consult	Partnership	Control
Stage in Project Cycle				
Identification		O,P	H,I,J,M,N	E,F,G,K,L
Planning	A,B,C,D,O,P,U	K,L,M,N,	H,I,J	E,F,G,K,L
Implementation	O,P,U	A,B,C,D,K,L	H,I,J,M,N	E,F,G,K,L
Monitoring and Evaluation		A,B,C,D,K,L,M,N,O,P,U	H,I,J	E,F,G,K,L

⁹⁵ Potential Project Impact

⁹⁶ Relative Priorities of Interest

Appendix 9 Period Evaluation

9.1 Period Data Indicators

9.1.1 Period 1999H

9.1.1.1 Management Data Indicators

9.1.1.1.1 Institutional Setting

A.1 Project Support⁹⁷

The Project was supported by The Research Centre WORK. The project team consisted out-off the following persons and their functions.

B. Donaldson	: Acting Director, Financial Management
W.P.C. van Steenderen	: Engineer (MSc), Planning, Design and Purchasing Materials
H.E. van Zandvoort	: Student (BSc), Project Manager
C. Da Lomba	: Student (MSc), Assistant to Acting Director and Engineer
Prof. R.T. McCutcheon	: External Consultant, consulting and advice
J. Crosswell	: External Consultant, consulting and advice

Most of the burden of the project management was put on the Site-Office, which consisted out of one person the Project Manager. B. Donaldson did visits on a regular base to the site at Mohlaletse village. During the first month close support was given by the Assistant. The Assistant also closed the project during the extended three weeks in July 1999.

A.2 Project Cycle⁹⁸

As discussed in Appendix Programme Management the full cycle is applied. The following project lifecycles phases are recognised with time period allocated to each phase

Identification	September 1998 – October 1998
Planning and Design	October 1998 – March 1999
Delivery	March 1999 – July 1999
Evaluation	August 1999 – September 1999

A.3 Project Structure

This can be visualised in Appendix Institutional Setting although most parties were represented in the institutional setting the larger part of the operation was focused on site. The structure on site is viewed top-down: levels were First Project Manager; Second Team Leader and Third Labour.

A.4 Project Scope⁹⁹

The project focused on infrastructure. This infrastructure was focused on drainage. Small-drainage structures like splash, drift, arch culvert and grouted stone pitching. The project had a short training component and had employed 90 people. Used local small sub-contractors that used donkey-carts and used local materials collected in the surrounding hills.

A.5 Project Procurement, Risk and Administration

The project had already been discussed at other occasions but never reach the stage of planning. The procurement of the project was done by Prof. R.T. McCutcheon, he convinced the Donaldson Trust Board of the possibilities and the needed financial resources.

The risk of allowing a student take control over a project of this nature was a risk but could be controlled if that student had the needed support and back-up.

During the construction it becomes clear that the administration was lacking a system and the assistant at head-office did her best to keep track but the system format was lacking.

⁹⁷ In the complete project cycle but with extra attention for planning, design and evaluation.

⁹⁸ Project cycle seen as four phases: Definition, Planning, Implementation and Evaluation.

⁹⁹ Consisting out off Time, Cost, Quality and Targeted Groups

9.1.1.2 *Economic Data Indicators*

9.1.1.2.1 Direct Economic Impacts

A.1 Employees

Employee of the Contractor that was allocated to the project was the Engineer from the Research Centre WORK. Other people were allocated but were not employed by the Research Centre.

A.2 Support

On site the support to the programme consisted out off a clerk/storekeeper that was responsible for the issuing of tools and following up small sub-contractors and document site-meetings. This person was employed on a daily bases and was paid R35 a day. Problems were encountered around the person's willingness to work, most of the time he would be sitting around doing nothing. This was resolved by replacing the person by the Tribal Clerk during the extension of the project.

A.3 Small Contractors

Two types of small contractors were used in the project. The Once-off were used to construct particular items that were needed in the project. Examples of this are the scaffolding of the Arch-Culvert and the surveying tools as the drainage profiles 1:3 and 1:2 and boning rods. The total cost off Small Contractor Once-Off was R2.950.

The Bulk small sub-contractors were used to transport the rock (R45 per cube) and water (R5 per drum). The Building Sand was delivered per load (R140) by several small sub-contractors; this depended on which one was available. The total cost off Small Contractors Bulk was R11.655. This involved a total 178 cube of rock, a total 342 drums of water and 17 loads of sand.

A.4 Suppliers

Suppliers were from two main locations. In Johannesburg the tools and special materials was purchased. Different suppliers were used to supply these items. In Mhlaletse suppliers were used to arrange the basic materials like cement and additional tools. The supplier from Swaziland supplied the only machine used during the construction, the rock-crusher.

A.5 Providers of Capital

The budget had been arranged from a private fund, Donaldson Trust that had interest in alleviating rural communities in South Africa. The total of the Budget was R250.000.

9.1.1.3 *Financial Data Indicators*

9.1.1.3.1 Resources

A.1 Work Force

The Work Force consisted out of four types; team leaders, builders, assistant builders and labourers. These were divided into six teams; Rock Team, Culvert Team, Arch-Culvert Team, Drainage Team, Intersection Team and Pipe/Drainage Team. The total cost was R100.511 and the task total was 4427 (TL 409; L 3193; B 446; AB 379)¹⁰⁰.

A.2 Tools

The largest part of the tools was bought in Johannesburg at different suppliers. The brand of the tools was mostly Lasher. The quality of these tools is very good and is produced in South Africa. The total sum was R11.247 (Johannesburg R9.679; Local R1.454).

A.3 Equipment

The only equipment that was purchased for this project was a Hand Rock-Crusher. This was bought at a firm in Swaziland, named New Dawn Engineering. Cost R8.721.

A.4 Materials

The materials were purchased in the direct vicinity of the project area. Three main items were distinguished namely; Cement, Building Sand and Building Materials. Of which the cost were: Cement R17.631; Building Sand R3.920 and Building Materials R 1.633.

¹⁰⁰ See Appendix Graphic Work Force and Sub-Contractors in the SDP

A.5 Transportation

The Work Force had the opportunity to collect their wages every second Friday. They were transported by bus to the teller at Jane Furse Plaza at Jane Furse. The taxi busses were rented and the work force needed to indicate who was wanted to go too Jane Furse the week before. Arrangements were then made with the local taxi owners to transport the members to Jane Furse. During the construction period only one accident occurred, but no member of the work force was injured. The agreed price per return trip was R20 per person.

9.1.1.4 *Social Data Indicators*

9.1.1.4.1 Labour Practise

A.1 Training and Education

During the first two weeks a short training course was given about the labour intensive method. This was also used to evaluate the team leaders and familiarise with the community. This training was supported with a simple test that gave some idea of what could be expected of the team leaders. This training only touched the surface of the labour intensive construction method.

A.2 Health and Safety

Health was based on the idea that the Clinic within the community would assist in small injuries and the hospital at Apel would be used when major injuries occurred. There was one large first aid kit available that travelled with the project manager. Every team was given Jerry-Cans to contain drinking water. The Jerry-cans were filled with fresh water every morning and distributed among the teams. Food was not provided and the work force arranged this them selves.

Safety equipment was distributed among the teams that needed specific items. Safety vest for construction along the road, and goggles for those who were working at the rock team. The gloves were separate items and each member was given a pair, these could be replaced when the gloves had worn off. No clothing or shoes were provided and the work force had to provide this them selves. With the large constructions along the road, white half-drum were supplied with a danger sing on them. Traffic was redirected and a clear d-tour was indicated.

A.3 Communication

The communication between the project management and the work force depended largely on the communication between the project manager and the team leaders. This did not always work perfectly. The comprehension of the English language by the team leaders was limited and this consumed a lot of time. Although the old government had been replaced the “yes boss, I understand” reply was still very visible. On numerous occasions the team leader replied that they understood, but in fact they did not. This resulted in misunderstanding and the project manager needed to get used to this idea.

The communication between Head-Office and Site-Office was done by cell-phone during the week. Over the weekend the project manager was in Johannesburg and would visit the University to report and collect goods. This was not an optimal situation. The project manager had to travel 20 minutes to be able to use the cell-phone. The distance between Johannesburg and the construction site was 470 kilometres. Both these difficulties delayed the project and did not allow quick responding to a difficult situation on site.

A.4 Diversity and Opportunity

The team were not rotated between the different constructions. This was done with the idea that the work force needed to get familiar with the processes and tasks at hand. Also this was just a pilot project that had a limited construction time.

9.1.1.4.2 Society

B.1 Community Participation

Community Participation was achieved on different occasions and levels. During the preparation time the Road Committee and the Tribal Counsel were consulted on what needed to be constructed and where. During this stage it was decided to accommodate the project manager within the community, with the Pastor of the Alliance Church. This increased the interaction between the community and the project management. The largest participation was achieved with the use of the local labour that was participation in the construction process of a construction that the community had chosen to be constructed.

B.2 Tribal relations

The Village Chief supported the project, and allowed his “Palace” to be used as a storage facility. This again increased the interaction. The weakness in this option was that it now seemed that the project had chosen a side in a tribal issue¹⁰¹, although the project was supposed to be neutral. Also the project needed to be open to all members of the community. During the construction one person was selected that was from a different village, after a community gather with the tribal council, the Mohlaletse Village decided that this person had to leave the project. At one occasion, members of the same family argued over the issue of the use of a particular plot. This was resolved by relocating the team outside the village. The team was collecting rock and needed the allowance of the family to use a particular track. The family was divided, so the management decided to relocate the team to a neutral location, although the distance was far bigger to the construction site where the collected material was needed.

During the closure of the project the Village Chief arranged storage facilities. The arrangement was made that at the location a homeless community member would act as a guard till the time came when the next project would start.

B.3 Competition and Pricing

The sub-contractors were paid an agreed price. This price turned out to be too high, but was agreed upon with consolidating of the Head-Office. The competition between the sub-contractors depended on the contractor’s resources and availability. But everybody that met the requirements and agreed on the price could partake in the transportation of rock.

With the water collection this was different. Only one water-tank was bought so the person that was willing to work for the offered price could start. If that person did not deliver the required amount we would look for different contractor.

9.1.2 Period 2000A

9.1.2.1 Management Data Indicators

9.1.2.1.1 Institutional Setting

A.1 Project Support¹⁰²

The Project was supported by The Research Centre WORK. The project team consisted out-off the following persons and their functions.

B. Donaldson	: Acting Director, Financial Management
A. Bouwmeester	: Engineer (MSc), Project Manager
W.P.C. van Steenderen	: Engineer (MSc), Planning, Design and Purchasing Materials
H.E. van Zandvoort	: Student (MSc), Assistant Project Manager
Students	: Student (BSc and MSc), Assistant to Project and Engineer
Prof. R.T. McCutcheon	: External Consultant, consulting and advice
J. Crosswell	: External Consultant, consulting and advice

Most of the burden of the project management was put on the Site-Office, which consisted out of one person the Project Manager. B. Donaldson did visits on regular bases to the site at Mohlaletse village. The Research Centre WORK supported the project by allocating students from the University of the Witwatersrand to combine there research with the project needs.

A.2 Project Cycle¹⁰³

As discussed in Appendix Project Management the full cycle is applied. The following project lifecycles phases are recognised with time period allocated to each phase:

Identification	August 2000 – September 2000
Planning and Design	August 2000 – September 2000
Delivery	September 2000 – December 2000
Evaluation	October 2000 – December 2000

¹⁰¹ During the eighties Mohlaletse was divided over who was the right full Bapedi King, see also Appendix Culture

¹⁰² In the complete project cycle but with extra attention for planning, design and evaluation.

¹⁰³ Project cycle seen as four phases: Definition, Planning, Implementation and Evaluation.

A.3 Project Structure

This can be visualised in Appendix Institutional Setting although most parties were represented in the institutional setting the larger part of the operation was focused on site. The structure on site is viewed top-down: levels were First Project Manager; Second Student; Third Team Leader and Fourth Labour.

A.4 Project Scope¹⁰⁴

The project focused on infrastructure. This infrastructure was focused on drainage. Small-drainage structures like splash, drift, arch culvert and grouted stone pitching. The project had employed 60 people. Used local small sub-contractors that used tractor-trailer and used local materials collected in the surrounding hills.

A.5 Project Procurement, Risk and Administration

After the 1999H project the idea was to continue as soon as possible with the programme, but with the lack of a correct Project Manager. After the Project Manager had agreed to start in August the Donaldson Trust made the funds available. The project had already been discussed at other occasions but never reach the stage of planning.

In the preparation towards the project students had designed the new drainage structure. The design and plan was done under supervision by the Research Centre WORK. These designs were lacking information about the central drink water system that crossed the drainage. The problem was resolved on site during construction. Again the format for the administration was lacking.

9.1.2.2 *Economic Data Indicators*

9.1.2.2.1 Direct Economic Impacts

A.1 Employees

The employee of the Contractor that was allocated to the project was the Engineer function as Project Manager. The Project Manager was assisted by the Research Centre WORK. The Research Centre WORK allocated one Engineer and one Student to the SDP; they were not employed by the contractor. The total cost was R32.000.

A.2 Support

On site the support to the programme consisted out off a clerk/storekeeper that was responsible for the issuing of tools and following up small sub-contractors and document site-meetings. This person¹⁰⁵ was employed on a daily bases and was paid R35 a day. During the project this person was introduced to work with a computer, this was a slow and time consuming effort, but resulted in the possibility of reporting and collecting data without the manager himself being present.

A.3 Small Contractors

Two types of small contractors were used in the project. The Once-off were used to construct particular items that were needed in the project. Examples of this are the scaffolding of the Arch-Culvert. This could not be retrieved from the documented data.

The Bulk small sub-contractors were used to transport the rock (R20 per cube) and water (R5 per drum). During the identification phase the project manager tried to use the same setting as 1999H. But the approached small sub-contractors closed the circle off persons who would be allocated this transport. This group was turned down and the project manager changed the concept to using tractor-trailer option. The water collection did not become problematic and was still done with the donkey-cart system. The Building Sand was collected either by renting a tractor-trailer combination (R150) per day or was paid by load (R160). The total cost off Small Contractors Bulk was R7.475. This consisted out of Rock (286 cubes), Water (351 drums) and Building Sand (19 loads).

A.4 Suppliers

Suppliers were from three main locations. In Johannesburg the tools and special materials was purchased. Different suppliers were used to supply these items. Because of the distant between Johannesburg and Mhlaletse a closer location was used to purchase tools and special materials this became Pietersburg. In Mhlaletse suppliers were used to arrange the basic materials like cement and additional tools.

A.5 Providers of Capital

The budget had been arranged from a private fund, Donaldson Trust that had interest in continuing the programme to alleviate the rural community in Sekhukhuneland. The total of the Budget was R200.000.

¹⁰⁴ Consisting out off Time, Cost, Quality and Targeted Groups

¹⁰⁵ This person was the Tribal Clerk

9.1.2.3 *Financial Data Indicators*

9.1.2.3.1 Resources

A.1 Work Force

The Work Force consisted out of four types; team leaders, builders, assistant builders and labourers. These were divided into nine teams; Team A, Team B, Team C, Team D, Team E, Team F, Team G, Team H and Team E. The total cost was R99.647 and the task total was 3618 (TL 666; L 2298; B 371; AB 283).

A.2 Tools

The brand that was preferred was Lasher, although the supplier at which the tools were purchased differed in price. In Pietersburg a reduced price was arranged at some suppliers. The total cost of tools was R3.710 Johannesburg R2.387, Regional R947 and Local R396).

A.3 Equipment

No new equipment was purchased during this period.

A.4 Materials

The materials were purchased in the direct vicinity of the project area. Three main items were distinguished namely; Cement, Building Sand and Building materials. Of which the total cost were: Cement R12.620; Building Sand R2.140.

A.5 Transportation

During this period the taxi trips were again paid according to the persons that were willing to collect the wages. A return trip was R20 per person.

9.1.2.4 *Social Data Indicators*

9.1.2.4.1 Labour Practise

A.1 Training and Education

During this period there was no training component. This was not done with the idea that the team leaders that would be used had already experience from the 1999H period. This turned out to be a mistake and needed to be rectified for all the reasons mentioned in the period evaluation.

A.2 Health and Safety

Health was based on the Village Clinic and the Apel Hospital. There was a First Aid Kit available on site. Water was distributed among the labourers but this was collected by them selves every morning. Food was not provided.

Safety was the same as during the period 1999H.

A.3 Communication

The communication the project manager and the work force broke down. During the construction it became more and more difficult to let the work force perform according to what was expected off them. Production was low, mostly due to misunderstanding between project management and the team leaders. The understanding of the English language by the team leaders became more a problem due to misunderstandings of what was expected of the work force. The situation became so bad that the project was terminated due to this problem.

Communication between Head-Office and Site-Office was not different from the period 1999H. During the weekends an assistant would be on the University of Witwatersrand to evaluate the week.

A.4 Diversity and Opportunity

During the start of the period the project manager tried to reinstate the donkey-cart haulage system. But due to the high price during last period, the contractors of that period wanted to have this opportunity to them selves. They blocked any new contractors into their group and made sure they were the only group talking to the project manager. This resulted in a single group of contractors that dominated the price negotiations. The project manager had no option to change to an alternative. This was found in the form of a tractor-trailer combination. The contractors that were willing to transport one cube of rock for R20 could be used. During the later stage of the period the contractor had problems with the quality of his equipment, this broke down on numerous occasions, and the diesel was available in limited supplies during harvest or planting seasons. But the advantage of this set-up was that the monopoly was broken of the donkey-cart group and other people could come forward if they wanted to work as a small sub-contractor.

9.1.2.4.2 Society

B.1 Community Participation

The community had changed the village institutional setting. They had created a Development Committee. This was the new committee that would be the community representatives. As with the period 1999H, initially the identification of the construction possibilities was investigated. Because of the heavy rains during February 2000, the village had suffered from the lack of drainage. The water from the mountain around the Post-Office could not be guided by a drainage structure into the Mhlaletse River. This period would construct this. Again the labour was chosen from the local community. The project manager was accommodated with the same pastor. The continuation was a relief to the community. The members of the community that were close to the construction were sometimes asked to store tools of the team that were working at that location. This was introduced by the teams during the 1999H Period.

B.2 Tribal relations

The Village Chief supported the construction and was guarding the project all the way. Most contacts with the Village Chief were undertaken by B. Donaldson, but on regular bases the project manager would visit and have lunch with the village chief to evaluate the project and the community opinion. This had been introduced by the chief request.

B.3 Competition and Pricing

As was mentioned with the sub-contractors, the issue with the donkey-cart owner was a problem. Although the project manager had solved this issue and the price went down, this still did not represent the situation that was required. During this period only two tractor-contractors were used. This did not represent the reliable transportation system that was required. More contractors needed to be found. The issue was not resolved and the contractor of the rock transportation started to complain about the distance between the collection site and the drop-off point. A solution was found in the allocating of a small team to the contractor that would load and off-load the rocks.

9.1.3 Period 2001A

9.1.3.1 Management Data Indicators

9.1.3.1.1 Institutional Setting

A.1 Project Support¹⁰⁶

The Project was supported by The Research Centre WORK. The project team consisted out-off the following persons and their functions.

B. Donaldson	: Executive Director, Financial Management
W.P.C. van Steenderen	: Engineer (MSc), Planning, Design and Purchasing Materials
A. Bouwmeester	: Engineer (MSc), Project Manager
R. Mariri	: Student (Technicon), Supervisor/Teacher
H.E. van Zandvoort	: Student (MSc), Assistant Project Manager
Students	: Student (BSc and MSc), Assistant to Project and Engineer
Prof. R.T. McCutcheon	: External Consultant, consulting and advice
J. Crosswell	: External Consultant, consulting and advice

Most of the burden of the project management was put on the Site-Office, which consisted out of one person the Project Manager. B. Donaldson did visits on regular bases to the site at Mhlaletse village. During the first month close support was given by the Assistant. The Assistant also closed the project during the extended three weeks in July 1999.

A.2 Project Cycle¹⁰⁷

As discussed in Appendix Project Management the full cycle is applied. The following project lifecycles phases are recognised with time period allocated to each phase

Identification	January 2001 – March 2001
Planning and Design	February 2001 – July 2001
Delivery	March 2001 – July 2001
Evaluation	July 2001 – August 2001

¹⁰⁶ In the complete project cycle but with extra attention for planning, design and evaluation.

¹⁰⁷ Project cycle seen as four phases: Definition, Planning, Implementation and Evaluation.

A.3 Project Structure

This can be visualised in Appendix Institutional Setting although most parties were represented in the institutional setting the larger part of the operation was focused on site. The structure on site is viewed top-down: levels were First Project Manager; Second Assistant Project Manager; Third Supervisor; Fourth Team leader and Fifth Labour.

A.4 Project Scope¹⁰⁸

The project focused on training and infrastructure. The training consisted out off nine modules. The training was a combination of class-training (theory) and practical-training (practise). Small-drainage structures like gabion, drift and grouted stone pitching were thought during training. The project had training component and had employed 90 people. Used local small sub-contractors that used tractor-trailer and used local materials collected in the surrounding hills.

A.5 Project Procurement, Risk and Administration

In the 2000A period contacts were opened with the Municipality and Anglo Platinum. Extra funding was arranged with Anglo Platinum and the Donaldson Trust. B. Donaldson had arranged the additional funding. The risk of allowing a student take control over a project of this nature was a risk but could be controlled if that student had the needed support and back-up.

The administration was lacking a system and the assistant at head-office did her best to keep track but the system format was lacking.

9.1.3.2 Economic Data Indicators

9.1.3.2.1 Direct Economic Impacts

A.1 Employees

The employee of the Contractor LITE that were allocated to the project was the Engineer function as Project Manager. To assist the Project Manager and to manage the project, an extra employee was hired, the supervisor. The supervisor needed to have a simple engineering background on Technicon Level. The Project was assisted by the Research Centre WORK. The Research Centre WORK allocated one Engineer and Students to the Project; they were not employed by the contractor. The total cost was R61.135 (PM R48.535 and Sup R12.600).

A.2 Support

The support on site was not allocated to a particular person. This was done because of the Limited size of the project ad this stage and it was thought that the two persons could take care of small operation. This was not true and in the next period this was resolved.

A.3 Small Contractors

Two types of small contractors were used in the project. The Once-off were used to construct particular items that were needed in the project. During this period they were used for tools sharpening and maintenance.

The Bulk small sub-contractors were used to transport the rock (R25 per cube) and water (R5 per drum). The Building Sand was delivered per load (R160). The total cost was R1.218.

A.4 Suppliers

Suppliers were from three main locations. In Johannesburg the tools and special materials was purchased. Different suppliers were used to supply these items. Because of the distant between Johannesburg and Mhlaletse a closer location was used to purchase tools and special materials this became Pietersburg. In Mhlaletse suppliers were used to arrange the basic materials like cement and additional tools.

A.5 Providers of Capital

The budget had been arranged from a private fund, Donaldson Trust that had interest in continuing the programme to alleviate the rural community in Sekhukhuneland. The second Client was the Anglo Platinum Mine of Atok. The total of the Budget was R500.000 of the Donaldson Trust and from the Anglo Platinum R540.000. Both these amount had to be used during an undefined period and could be used as LITE sow fit.

¹⁰⁸ Consisting out off Time, Cost, Quality and Targeted Groups

9.1.3.3 *Financial Data Indicators*

9.1.3.3.1 Resources

A.1 Work Force

The Work Force consisted out of four types; team leaders' trainees and labourers. First the group team leader trainees did work at Mohlaletse, Later they were divided into team at two sites Monametse and Mohlaletse. The total cost was R10.961 and the task total is not known for this period because the documentation could not be retrieved.

Mohlaletse: Team Trainees Team Leader Mohlaletse

Monametse: Team Trainees Team Leader Monametse

A.2 Tools

The tools were bought at the following location: Johannesburg (R463), Regional (R3.192) and Local (R745). Most of the tools already available due to old periods, these had left over tools that were still in good shape.

A.3 Equipment

New equipment was purchased in the form off surveying equipment a Theodolite (R14.794). Other equipment that was used was borrowed from the Research Centre WORK. Discussions were started about compaction equipment but they were bought in the next period. Two plate-compactors were ordered from Bomach and used in surface compaction.

A.4 Materials

Materials were purchased in the direct vicinity of the project areas. The following items were distinguished namely: Cement (Mohlaletse R2.927 and Monametse R5.890), Building Sand (Mohlaletse R640) and Building Materials.

The building sand that was used in Monametse was collected with the Nissan Bakkie 1 tonne. This was done because the preparation had not made allowance for a new investigation of the possibility of using the same small-contractor system as in Mohlaletse. The community had to get used to the presence of LITE and did not yet trust the company.

A.5 Transportation

The short period of construction and the small number that was employed was paid through existing bank accounts. Other people were given it cash. But it became clear that the team leaders in Monametse needed to be refunded for their daily travel-cost. This varied between R10 and R14 depending on where the team leader was staying.

9.1.3.4 *Social Data Indicators*

9.1.3.4.1 Labour Practise

A.1 Training and Education

The training

During this period a training-course was started. This course used modules written by the Research Centre WORK. The course consisted out of eight modules: Calculations, Introduction to Construction, Setting Out, Construction Act1, Construction Act2 and Machines, Project Management, Maintenance and Gabions. Two different villages were used to select the initially 20 trainees. In the two villages, Mohlaletse and Monametse, selections were made according to a written test and interviews. This was done to avoid the possibility that not selecting persons that were highly motivated, but did not do well in the test. During the first weeks of the training 3 people from the selected candidates, left the training course and were not replaced. The training modules were lacking a practical component¹⁰⁹. The training was scheduled for three months, but this was extended to four months. The trainees performed very poor during the written tests that the passing percentage was reduced from 75% to 65%¹¹⁰ and the number of test per module was increased from one to three. Due to this poor performance the project manager started evening classes, to educate the trainees in the basic of English and Math. The lessons were an initiative of the project manager.

¹⁰⁹ What is mend is the combination of theoretical training on a subject and then directly after that training a practical to apply the knowledge

¹¹⁰ Site Office Documentation Files

The preparation towards the course had been chaotic. The trainees that came from Monametse had to be accommodated at the Alliance Church. Food had been arranged R15 per meal at Thete Restaurant. The class room that was used was located on the premises of the Fetakgomo High School in Mohlaletse.

The project manager was assisted by a Technicon student, who was employed by LITE. This student was also doing his internship with LITE to finish his education. The student was lacking practical experience and theoretical knowledge about the labour intensive construction method. It was hoped that during the teaching of the team leader course the supervisor would gain knowledge of this construction method and would understand the philosophy behind the method.

A.2 Health and Safety

No additional actions were undertaken to reduce the change of injuries or increase the safety. During the first construction period after the course a team leader trainee was injured during construction. She had to be carried to the hospital at Fetakgomo. This incident showed that the precautions that were taken by LITE were not sufficient. Luckily the project manager was white and could make use of the facilities at the Atok Amplats Mine. After this incident it was decided that next time the course would need a First Aid module written into the course, to reduce the change of lasting injuries. A positive effect was that the team leader trainees were very aware now of the dangers during construction.

A.3 Communication

Communication between the project manager and the work force improved. Not only did the extra level of supervision add to this but more so the training course. Now the team leader trainees understood the tasks given to them and started interacting with the management. Misunderstandings were less common, now the interpretation of what was expected started to play a role.

Communication between Head-Office and Site-Office continued to be a problem. Especially around the payment of wages and also the particular function descriptions were lacking.

A.4 Diversity and Opportunity

The teams were small and the team leader trainees were working in couples. The idea behind this was that they could assist each other if they did not understand the task at hand. The training was not finished and they were given the opportunity to show what they had learned from the course.

9.1.3.4.2 Society

B.1 Community Participation

The start of the second site at Monametse required special attention towards the community. In the first week there was a break in at the storage container. Most of the tools were stolen, but nobody was caught. After the incident it was made clear that if this would happen again the project would be terminated and the team leader trainees would be out of a job. This cleared the way for better communication with the community at Monametse. The Youth Committee was the institution that LITE used to communicate with. They were the only committee active within the community and could assist with problems. The mine had indicated that they wanted the road to be re-gravelled and the community wanted the bridge repaired. It was decided that the bridge would be the main focus and as the period unfolded and construction would get on the way the road would be up-graded.

The team leader trainees at Mohlaletse felt that the project manager was spending too much time at Monametse and were opposing the supervisors rule. They requested of the manager that he would be available and present at the site during the week with idea of talking to the manager when they wanted to. The project manager did also use the facilities at that were offered by the mine and preferred to work at the mine facilities¹¹¹. The team leader trainees went on strike and demanded an interaction with the manager on regular bases, the community felt left out¹¹².

B.2 Tribal relations

At Monametse the local chief was supporting but not in an active way. Monametse had lost most of its tribal culture due to the interference of the Atok Mine.

B.3 Competition and Pricing

The community at Monametse did not come forward to work together with LITE on small sub-contracting. They were simply not interested in working at the offered rate. The project manager transported most materials with his Nissan Bakkie.

¹¹¹ The mine had a shower, running water, privacy etc.

¹¹² Interview with team leader trainees, June-July 2001

9.1.4 Period 2001H

9.1.4.1 Management Data Indicators

9.1.4.1.1 Institutional Setting

A.1 Project Support¹¹³

The Project was supported by The Research Centre WORK. The project team consisted out-off the following persons and their functions.

B. Donaldson	: Executive Director, Financial Management
W.P.C. van Steenderen	: Engineer (MSc), Planning, Design and Purchasing Materials
H.E. van Zandvoort	: Engineer (BSc), Programme Manager
R. Lodeweges	: Student (BSc), Assistant Programme Manager
S. Mello	: Engineer (Technicon), Supervisor
R. Mariri	: Student (Technicon), Supervisor
Prof. R.T. McCutcheon	: External Consultant, consulting and advice
J. Crosswell	: External Consultant, consulting and advice

Most of the burden of the project management was put on the Site-Office, which consisted out of one person the Project Manager. B. Donaldson did visits on regular bases to the site at Mohlaletse village.

A.2 Project Cycle¹¹⁴

As discussed in Appendix Project Management the full cycle is applied. The following project lifecycles phases are recognised with time period allocated to each phase:

Identification	June 2001 – September 2001
Planning and Design	August 2001 – December 2001
Delivery	September 2001 – December 2001
Evaluation	December 2001 – January 2002

A.3 Project Structure

This can be visualised in Appendix Institutional Setting although most parties were represented in the institutional setting the larger part of the operation was focused on site. The structure on site is viewed top-down¹¹⁵: levels were First Programme Manager; Second Assistant Programme Manager; Third Supervisor; Fourth Team Leader plus Storekeeper and Fifth Labour.

A.4 Project Scope¹¹⁶

The project focused on infrastructure and capacity. This infrastructure was focused on drainage. Small-drainage structures like drift, bridge, culverts and grouted stone pitching. The capacity was focused building a compound for accommodation the site management. The project finished the training component and employed 60 people. Three Project were identified; Mohlaletse Road, Mohlaletse Compound and Monametse Road. The projects used local small sub-contractors that used tractor-trailer or donkey-carts. Local materials collected in the surrounding hills were used in the construction of the different projects.

A.5 Project Procurement, Risk and Administration

Procurement of the different projects was done by the securing a budget. This budget was allowed to be allocated as the Contractor saw fit, but with the agreement of the two consultants.

The students that were used for supervision were managed by the programme manager. The programme still was lacking a particular format for documentation. Research had been done during the February-July period for a Programme Approach and Project document. These sheets were used but were not acknowledged by the Head-Office. A document that explained the principles of the task-system and could be used and understood by the supervisors and team leaders was not available. A draft a4-document was used on site to elevate this problem.

¹¹³ In the complete project cycle but with extra attention for planning, design and evaluation.

¹¹⁴ Project cycle seen as four phases: Definition, Planning, Implementation and Evaluation.

¹¹⁵ First Position then Number of persons

¹¹⁶ Consisting out off Time, Cost, Quality and Targeted Groups

9.1.4.2 *Economic Data Indicators*

9.1.4.2.1 Direct Economic Impacts

A.1 Employees

The employee of the Contractor LITE that was allocated to the project was the Engineer function as Programme Manager. To assist the Project Manager and to manage the project, two supervisors were employed. Both supervisors were Technicon educated, one was finished and the other did his internship with LITE. The Project was assisted by the Research Centre WORK. The Research Centre WORK allocated one Engineer and Students to the Project; they were not employed by the contractor. The total cost was R47.500 (Pr Man. R30.000, Sup. R17.500).

A.2 Support

During this period a storekeeper was employed, this was done with the idea of replacing this person when it became clear what could be expected of the SDP. This person was employed on a daily basis (R35).

A.3 Small Contractors

Two types of small contractors were used in the project. The Once-off were used to construct particular items that were needed in the project. During this period they were used for tools sharpening and maintenance. The total cost off the Small-Contractor Once-Off was R4.902.

The Bulk small sub-contractors were used to transport the rock (R25 per cube) and water (R5 per drum). The Building Sand was delivered per load (R160). A new system was started to rent the tractor-trailer on a daily bases (R150), in which case LITE paid for the fuel. The total cost off the Small-Contractor Bulk was R7.531. This amount represents Rock (59 cube), Water (189 drums), Building Sand (16 loads) and Tractor-Trailer (11 days).

A.4 Suppliers

Suppliers were from three main locations. In Johannesburg the tools and special materials was purchased. Different suppliers were used to supply these items. Because of the distant between Johannesburg and Mhlaletse a closer location was used to purchase tools and special materials this became Pietersburg. In Mhlaletse suppliers were used to arrange the basic materials like cement and additional tools. In the village of Apel contact was made with a supplier that could assist in construction and could deliver specific.

A.5 Providers of Capital

The budget had been arranged from a private fund, Donaldson Trust that had interest in continuing the programme to alleviate the rural community in Sekhukhuneland. The second Client was the Anglo Platinum Mine of Atok. The total of the Budget was R500.000 of the Donaldson Trust and from the Anglo Platinum R540.000. Both these amount had to be used during an undefined period and could be used as LITE sow fit.

9.1.4.3 *Financial Data Indicators*

9.1.4.3.1 Resources

A.1 Work Force

The Work Force consisted out of four types; team leaders and labourers. These were divided into team at two sites Monametse and Mhlaletse. The total cost was R114.702 and the task total was 2898 (Mhlaletse: TL 432, L 840; Monametse: TL 327, L 1299).

Mhlaletse Road; Team Salome, Team Patrick, Team Jeffrey, Team Paul, Team Agnes and Team Chozy
Mhlaletse Compound: Team Phineas.

Monametse Road: Team Harry, Team David, Team Johannes, Team Peter and Team Lucas.

The Team Leaders were working in couples which allowed them to assist each other. Per week they were assigned as Leader. As to expose them to the team leader they had to become when the team leader would be working alone. The supervisor could request any team leader to assist the supervisor at any time.

A.2 Tools

The largest part of the tools was now purchased at Bapedi in Apel. This was more convenient. The Total sum was R51.326 (Johannesburg R4.157, Regional R44.972 and Local R2.197).

A.3 Equipment

The project needed the capacity to deliver and construct the projects. For these projects special equipment was required, like hand mixers and compactors. This creating of capacity required investment in these items. The total cost was R150.631 (Johannesburg R145243, Regional R5.388).

A.4 Materials

The materials were purchased in the direct vicinity of the projects. Three main items were distinguished namely; Cement R24.271 (Mohlaletse R13.081, Monametse R11.190) Building Sand R3.135 (Mohlaletse R2.560, Monametse R575) and Building Materials R34.161 (Mohlaletse R1.538, Monametse R13.066 and LITE-House R19.557)

A.5 Transportation

This time the transport cost of the cost to the point where the labourers could collect their money was introduced to both sites. That meant that in Mohlaletse was paid R20 and Monametse paid R35 to travel the closest teller per taxi trip per person.

9.1.4.4 *Social Data Indicators*

9.1.4.4.1 Labour Practise

A.1 Training and Education

The practical training of the team leader trainees continued after the break. The whole month of September was used to evaluate and see if the team leader trainees were able to function as team leaders. Only the trainees that had past the theoretical exams 7 trainees in Mohlaletse and 6 trainees in Monametse were still in the course during September. In the first week one trainee left the course in Monametse. At Mohlaletse two trainees were given an extended period because the programme manager was not satisfied with their participation. After this two week period they also become qualified team leaders. During this first six weeks, it became clear that the old set-up of the training course was not fully understood by the trainees. They had complaints about the course, not about what was learned but more on the information given to them before the start. The problem had been that the training course was partly written during the period it was taught. This led to misunderstanding and uncertainties during the course because the participants could not be fully informed on what could be expected because the project manager did not know at the time.

A.2 Health and Safety

The introduction of smaller first aid kits to every team was an improvement, but also increased the use of pain killers for all sorts of pains. Most of them not related to the job. These items were used but not recorded, so after a while the team leader would request for re-fills but could not explain for what they had used the first aid kit. The drink water that was used for the team was too salty according to the labourers; this came because the water was pumped up from 30 metre.

The safety was discussed on several occasions with the team leaders. They explained that the labourers were complaining about shoes. Some of the team members were not wearing any shoes at all. The issue was addressed to the Head-Office and they first regarded the issue as a minor complaint. The Head-Office said that if a system could be set-up in which the labourers could not steal these safety items with the next period clothing and shoes could be ordered. Tests were conducted with different type of gloves. These tests had as result that the rubber-glove was the cheapest and quality wise the best option.

A.3 Communication

Communication between the Site-Office and the work force was improved by the employment of a second supervisor. The team leader needed to get used to the new setting in Mohlaletse but after two months the new system could be exploited to its potential. The result was an increase in the collecting of rock with almost 100%.

The communication between Head-Office and Site-Office continued to be lacking the efficiency. There were still delays in payment of the wages. This became so bad that the team at Monametse went on strike. The team only continued after they had received their wages in their bank accounts. The telephone cost was also increasing because a pre-paid system was used.

A.4 Diversity and Opportunity

Because the teams were rotated around the different construction they were exposed to different types of work. The team leaders were still in couples and were assisting the supervisor with the setting-out and planning the weekly tasks. The team weekly task system was used. This meant that the supervisor needed to have the task-records ready at Wednesday. The team leaders could plan and ask for explanations if they did not understand. During Friday they could order materials and fill in the tools requirement form. This system slowly started to work and resulted in a reduction of construction time. Teams could request an extra task or could have the Friday off if the team leader and the supervisor were satisfied about the quality of the finished tasks.

9.1.4.4.2 Society

B.1 Community Participation

The community was involved at different levels. Most valuable was the hiring of the local labour. The Development Committee still participated but because the construction was still at the same location a monthly meeting was used to explain result of the programme. With the start of the building of the Compound (later LITE-House) the community realised that LITE would be staying for a long time. It was also indicated that LITE was independent and everybody that was willing to work could come forward.

At Monametse the team leaders were from different locations. The team leaders were not staying at Mohlaletse but were from somewhere else around Atok. The supervisor was accommodated within the community, but not at the construction site.

B.2 Tribal relations

At Mohlaletse the village chief gave us the opportunity to use his “Kraal” to store the expensive equipment this to reduce the change of theft.

At Monametse the same set-up was used, the village chief was used to store valuable equipment at his “Kraal”. This allowed interaction with the local community and ensured safety.

B.3 Competition and Pricing

The transportation of Rock was increased to R25 a cube, but the contractor would do loading and unloading. The water contractor was reducing his reliability in delivering the required drums. This created tension between the team leaders, supervisor, storekeeper and the contractor. The possibility to use a different contractor was reduced by the fact that the payment in comparison with other client was less. The other problem was that during the winter period the donkeys were let loose to find food but could not be retrieved at short notice, due to the wondering of the animals. Two contractors could supply the SDP with enough water to carry out construction. The tractor-trailer system worked well with additional contractors coming forward.

At Monametse the transportation continued to be a problem and this had to do with the presence of the Anglo Mine.

9.1.5 Project 2002H

9.1.5.1 Management Data Indicators

9.1.5.1.1 Institutional Setting

A.1 Project Support¹¹⁷

The Project was supported by The Research Centre WORK. The project team consisted out-off the following persons and their functions.

B. Donaldson	: Executive Director, Financial Management
W.P.C. van Steenderen	: Engineer (MSc), Planning, Design and Purchasing Materials
H.E. van Zandvoort	: Student (MSc), Programme Manager
S. Mello	: Student (Technicon), Supervisor
R. Mariri	: Student (Technicon), Supervisor
E. Tuwani	: Student (Technicon), Supervisor
Prof. R.T. McCutcheon	: External Consultant, consulting and advice
J. Crosswell	: External Consultant, consulting and advice

Most of the burden of the project management was put on the Site-Office, which consisted out of one person the Project Manager. B. Donaldson did visits on regular bases to the site at Mohlaletse village.

A.2 Project Cycle¹¹⁸

As discussed in Appendix Project Management, the full cycle is applied. The following project lifecycles phases are recognised with time period allocated to each phase

Identification	January 2002 – February 2002
Planning and Design	February 2002 – June 2002
Delivery	February 2002 – July 2002
Evaluation	August 2002 – September 2002

¹¹⁷ In the complete project cycle but with extra attention for planning, design and evaluation.

¹¹⁸ Project cycle seen as four phases: Definition, Planning, Implementation and Evaluation.

A.3 Project Structure

This can be visualised in Appendix Institutional Setting although most parties were represented in the institutional setting the larger part of the operation was focused on site. The structure on site is viewed top-down: levels were First Programme Manager; Second Assistant Programme Manager; Third Supervisor plus Clerk; Fourth Team Leader plus Storekeeper and Third Labour.

A.4 Project Scope¹¹⁹

The project focused on infrastructure and capacity. This infrastructure was focused on drainage. Small-drainage structures like drift, bridge, culverts and grouted stone pitching. The capacity was focused building a compound for accommodation the site management. The project finished the training component and employed 90 people. Three Project were identified; Mohlaletse Road, Mohlaletse LITE-house/school and Monametse Road. The projects used local small sub-contractors that used tractor-trailer or donkey-carts. Local materials collected in the surrounding hills were used in the construction of the different projects.

A.5 Project Procurement, Risk and Administration

Procurement of the different projects was done by the securing a budget. This budget was allowed to be spending as the Contractor saw fit with the consulting of the two consultants.

The students that were used for supervision were managed by the programme manager. This group needed attention from the Programme Manager that was not always available.

The programme still was lacking a particular format for documentation. The sheets designed during the research done during the February-July 2001 period were used to document the programme. These sheets were used but were not acknowledged by the Head-Office. The draft A4-document was still in use for the task-system but was clearly lacking explanatory notes.

9.1.5.2 *Economic Data Indicators*

9.1.5.2.1 Direct Economic Impacts

A.1 Employees

The employees of the Contractor LITE that were allocated to the project were the Engineer function as Programme Manager and an Engineer that was doing the designs. To assist the Project Manager and to manage the project, three supervisors were employed. The supervisors were Technicon educated, one was finished and the two others did their internship with LITE. In the change that a second programme would be started an administrator was employed. This person had an accounting background and was Technicon educated. The total cost was R47.600 (Supervisors R40.600, Administrator R7.000). The cost of the programme manager was allocated to the other programme.

The Project was assisted by the Research Centre WORK. The Research Centre WORK allocated Students to the Project; they were not employed by the contractor.

A.2 Support

During this period a storekeeper was employed, this was done with the idea of replacing this person when it became clear what could be expected of the SDP. This person was employed on a daily basis (R35). The total cost was R2.800.

A.3 Small Contractors

Two types of small contractors were used in the project. The Once-off were used to construct particular items that were needed in the project. During this period they were used for tools sharpening and maintenance. The total cost was R 4.430.

The Bulk small sub-contractors were used to transport the rock (R25 per cube) and water (R5 per drum). The Building Sand was delivered per load (R160). A new system was started to rent the tractor-trailer on a daily bases (R150), in which case LITE paid for the fuel. The total cost was R30.832. This consisted out of Rock (566 cubes), Water (897 Drums), Building Sand (56 loads) and Tractor-Trailer (96 days)

At Monametse small sub-contractors were used in the donkey-cart haulage. The contractors were offered R75 for one day of work with a minimum required amount of trips of 8. This achieved after a series of talks. This system did not work well.

¹¹⁹ Consisting out off Time, Cost, Quality and Targeted Groups

A.4 Suppliers

Suppliers were from three main locations. In Johannesburg the tools and special materials was purchased. Different suppliers were used to supply these items. Because of the distant between Johannesburg and Mhlaletse a closer location was used to purchase tools and special materials this became Pietersburg. In Mhlaletse suppliers were used to arrange the basic materials like cement and additional tools. In the village of Apel contact was made with a supplier that could assist in construction and could deliver specific.

A.5 Providers of Capital

The budget had been arranged from a private fund, Donaldson Trust that had interest in continuing the programme to alleviate the rural community in Sekhukhuneland. The second Client was the Anglo Platinum Mine of Atok. The total of the Budget was R500.000 of the Donaldson Trust and from the Anglo Platinum R540.000. Both these amount had to be used during an undefined period and could be used as LITE sow fit.

9.1.5.3 *Financial Data Indicators*

9.1.5.3.1 Resources

A.1 Work Force

The Work Force consisted out of four types; team leaders and labourers. These were divided into team at two sites Monametse and Mhlaletse. The total cost was R145.132 and the tasks total was 7569 (Mhlaletse Road: TL 647, L 3387; Mhlaletse LITE-House/School: TL 199, L 908, B 410; Monametse Road: TL 399, L 1619).

Mhlaletse Road: Team Salome, Team Patrick, Team Jeffrey, Team Agnes and Team Chozy.

Mhlaletse LITE-House/School: Team Paul and Team Phineas

Monametse: Team Harry, Team David, Team Johannes, Team Peter and Team Lucas.

The Team Leaders were working in couples which allowed them to assist each other. Per week they were assigned as Leader. As to expose them to the team leader they had to become when the team leader would be working alone. The supervisor could request any team leader to assist the supervisor at any time.

A.2 Tools

The tools were bought local. The total cost was R5.934.

A.3 Equipment

During this period there were new investments in the creating of capacity. This had to due with the transportation issue. Total cost was R45.645 (Johannesburg R36785, Regional R8.860).

A.4 Materials

The materials were purchased in the direct vicinity of the projects. The three main items identified were: Cement R63.324 (Mhlaletse R49.170, Monametse R14.154), Building Sand R3.461 (Mhlaletse R1.637, Monametse R1.824) and Building Materials R83.906 (Mhlaletse R13.528, LITE-House/School R56.000 and Johannesburg R14.378).

A.5 Transportation

During this period a new teller was opened at the Anglo Platinum Mine. What mend that the labourers at Monametse did not needed to be paid to travel to a teller anymore. The price at Mhlaletse was raised due to increased oil prices to R30 per person per return trip.

9.1.5.4 *Social Data Indicators*

9.1.5.4.1 Labour Practise

A.1 Training and Education

The training was finished but the team leaders needed guidance with the task they were given. It became clear that the second training course of the SDP would not continue, due to lack of funds. Some of the team leaders showed promising initiatives and they could be trained in becoming supervisors or small sub-contractors. In the long time that the programme ran it became clear that the next training course would need a Life-Skills module. This module would educate the team leaders in dealing with the financial constraints of earning money. To elaborate on this item, most team leaders and even the supervisors would take out loans with local shops but had no idea of when they have paid of their depth. The saddest part was when they no longer could sustain the long and had to return the item to the shop.

A.2 Health and Safety

Health and Safety were improved. Safety Shoes and Work Suits were introduced to the teams. The system used was as follows:

The shoes and suits were lent to the labourer. In the two first wages as amount was subtracted from their wage and would be used as a down-payment. This down-payment would be paid in full into the bank-account at the moment the labourers' contract was fulfilled. If the labourer decided to leave before the contract ended, an amount was deducted from their down-payment. This depended on the time the labourer had already worked with the organisation. Any loss or damage to the shoes or suits was the labourers' responsibility. A simple rule was applied: No shoes or/and suit No work. This meant that if the labourer was not wearing his or her safety shoes or working suit they could not get to work, which meant no wage could be earned. This system worked perfectly and no items were stolen or lost during the construction time.

A.3 Communication

Communication between the Site-Office and work force was better, although the unclear description of what was meant with certain tasks became an issue at several occasions. There were discussions between supervisors and team leader and team leader and labourers. These discussions created tensions, and sometimes resulted in disagreement. This issue could easily be avoided if a task description from that quantified the tasks could be produced. This was requested of the Research Centre WORK but they did not see any priority. Also Head-Office was consumed by the new Programme and did not see this as a priority.

A.4 Diversity and Opportunity

The structure in use with the different sites was based on rotation of the team members. This rotation allowed diversity within the weekly team task system. The supervisor was assisted by the team leaders and the team leaders were assisted by the labourers. This resulted in a bottom-up structure that involved the whole work force. Labourers and team leaders that were coming forward would be involved in the next level of the structure. This created a better understanding of how the labour intensive method worked.

9.1.5.4.2 Society

B.1 Community Participation

The community was involved at different levels, the largest part being the employment of the work force. The projects that were undertaken now also involved the building of a School. This school would house the trainees of the Mhlaletse Youth Service Programme. The programme would involve 450 trainees over a 5 year period. The first group of initially 50 but later 60 trainees started in April 2002. The school was built at the development area, located within the Mhlaletse Village. This was decided by the Development Committee. There was a dispute with a community member over the precise location of the plot. This was resolved through the Development Committee.

At Monametse the community was asked to come forward with small sub-contractors to transport materials. This resulted in a delay because the community was reluctant to come forward. Several donkey-carts were constructed and used at Monametse for the transport of materials, but with no great success. The contractors were unwilling to work for the offered price. A daily wage was negotiated with a minimum number of trips (6). This was used as a task system. When the community realized that the project would end during June-July 2002 they became insecure. The owner of the container that was used for storage started to ask money for the use of the container. Team leader would be delaying some construction for no apparent reason. The work force was very aware of the termination and wanted to be assured on several occasions that they would receive their final payments. A special sheet was produced that indicated who was paid what and when. This cleared the air and during July all the tools and equipment were transported back to Mhlaletse.

B.2 Tribal relations

The Village chief at Mhlaletse lost his son from his chosen wife, during this period. The LITE organisation visited the chief to bring their condolences, this was received very well not only by the chief but by the whole community.

At Monametse the "kraal" was used again to store equipment.

B.3 Competition and Pricing

As with the previous periods the pricing did not change from the 2001H Period. The competition was increased with the bulk transport with the hiring off extra contractors. These contractors could partake in the transportation of materials if they agreed on the offered price, there were no negotiations because the price was all ready agreed with the other contractors.