DANIDA

Kwaluseni Pilot Project Annex 3
Community Survey Report

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LIST OF ACRONYMS USED

CSO	Central Statistical Office
DANCED	Danish Co-operation for Environment and Development
DPM	Deputy Prime Minister
Hon	Honourable
LUSIP	Lower Usuthu Irrigation Project
MHSW	Ministry of Health and Social Welfare
MHUD	Ministry of Housing and Urban Development
MP	Member of Parliament
RDA	Rural Development Area
RHM	Rural Health Motivators
SEA	Swaziland Environment Authority
SNL	Swazi Nation Land

1. INTRODUCTION

1.1 PURPOSE OF THE SURVEY

The government of Swaziland, with assistance from the Danish government, is currently in the process of formulating a National Solid Waste Management Strategy (NSWMS). A draft was prepared in September 2001. The Strategy realises the increasing solid waste management problem that exists in rural and peri-urban areas which are located on Swazi Nation Land (SNL), non-rate paying and therefore not serviced by the local governments. The idea is to formulate and introduce suitable waste management systems for such areas. Two pilot projects, one in Kwaluseni and another in Siphofaneni, have been planned to field test the recommendations of the draft NSWMS. In order for this to happen, it has been considered important to have a community consultation process that would involve both residents and commercial enterprises of both pilot project areas. The process would help capture community views and initiate a dialogue that would create awareness and foster good waste management practices.

Results of the survey will provide important information that will be incorporated into the final NSWMS report. The survey is also in line with the Waste Regulations 2000, which provide for the declaration of Waste Control Areas (WCA), in that the implementation of its results will constitute the initial step towards the declaration of the pilot project areas as WCA.

1.2 BACKGROUND - KWALUSENI

Kwaluseni is situated in the Manzini region, about 7 km from the Manzini city. It is a peri-urban area that is situated next to the Matsapha Industrial Estate. The latter has greatly influenced the settlement pattern of Kwaluseni; that is the housing demand that comes with the establishment of industrial towns has meant that Kwaluseni, and its surrounding areas, have had to respond to this demand, but in an unplanned fashion. Most plots in Kwaluseni are characterised by the presence of a number of flats for rental accommodation, and a number of formal and informal businesses such as shops, fruit and vegetable street vendors, markets, welding, carpentry, radio and car repairs, etc. However, infrastructure development in the area has not been able to catch up with the development of the other activities, and this is slowly becoming a problem.

The population of Kwaluseni is high and may be expected to increase over time. According to 1997 estimates, the population of the area is about 3 663 people (CSO, 2002). Today's estimates may be much higher. The Kwaluseni Inkhundla consists of 8 zones, i.e. Zone A to Zone H. Each zone has a leader. There are no

physical boundaries between the zones, but each zone is a cluster of plots or homesteads, whose numbers vary between zones.

1.3 BACKGROUND - SIPHOFANENI

Siphofaneni is located in the Lubombo region, about 50 km from Manzini, on the Big Bend direction. It is situated in an area that has had chieftancy disputes recently, most of which are still unresolved. The central area of Siphofaneni is largely dominated by the presence of small and larger businesses (both formal and informal), whose numbers are fast growing. They include supermarkets, small shops, restaurants, bottle stores, butcheries, fruits and vegetable street vendors, carpentry, mechanics, filling station, etc. The area is gradually assuming the characteristics of a town and has become a major transit point.

Siphofaneni business area draws people from surrounding chiefdoms, either for permanent residence or for carrying out daily business transactions. Both the permanent and temporary populations of the area are increasing, and the situation may be expected to worsen with the implementation of other developments such as the proposed Lower Usuthu Irrigation Project (LUSIP). According to 1997 estimates, the population of Siphofaneni business area is 1487 people. This figure excludes the 1162 people who are found in the periphery of the business centre (CSO, 2002).

The developments in Siphofaneni are growing in an unplanned fashion, and hence the increasing amount of waste that it generates is not handled in an organised fashion. It will therefore be necessary to develop a system for managing solid waste in the area.

2. APPROACH AND METHODOLOGY

2.1 APPROACH AND METHODOLOGY

Preparations for the public consultation consultancy started on 11 February 2002.

2.1.1 Literature Review

The guiding documents for the consultation process in Kwaluseni has been the proposed Solid Waste Management System that was formulated by the Waste Management Committee for the area as well as the draft Waste Collection/Management System proposed by DANCED/SEA. The public consultations were aimed at testing if the proposed system is in line with the thinking and means of the affected community, and if need be, guide the formulation of suitable ad-

justments to the proposed system as well as even the National Solid Waste Management Strategy.

2.1.2 Preliminary Assessments

Preliminary discussions were held with some key community members who work very closely with the community in each zone. These included the Kwaluseni Councillor (who is also chairman of the Kwaluseni Waste Management Association), Community Development Worker based at Ludzeludze RDA office, Rural Health Motivators (at least one from each of the 5 zones D, E, F, G and H). The objective was to establish a working relationship with these people and also get relevant information on the local issues. The Community Development Worker for the area, mainly due to administrative issues in her department, has not worked much with the Kwaluseni community and therefore is not familiar with the area. As such, very little relevant information could be obtained for purposes of this study. However, there may be room for her participation during the implementation of the Community Education and Awareness Programme.

With the assistance of three RHMs, a familiarisation tour of the different zones was undertaken. The intention was to get an idea of the zone sizes, their geographical locations and boundaries, and the presence and distribution of the main physical features that would become relevant for the consultation process. Since to the north of Kwaluseni, the study area boundary is marked by the Luntsantsama River, zones A, B, C and D automatically fall out of the assessment area because they are located across the river. The tour also helped to visually inspect the general waste situation in the study area.

Data collection was done by means of one-to-one discussions, focus group discussions and on-site observations. A letter obtained from the office of the NSWMS Project was used to introduce the consultant and the purpose of the survey to the community members that were chosen for the study.

2.1.3 Literature Review

Review of relevant literature on Kwaluseni, such as the Draft National Solid Waste Management Strategy and the proposed Waste Management System for Kwaluseni community, etc was done. Discussions were held with Allen (student who undertook the physical waste survey) and Elisabeth Riber Christeinsen (Danish consultant for awareness creation and education).

2.1.4 Design of Questionnaire

A suitable questionnaire was designed using information gathered from the literature review as well as the preliminary discussions that were held earlier with other stakeholders (see Appendix 3 for the questionnaire). The final design of the questionnaire was also a result of assistance from Mr Tinus Joubert (Chief Technical Advisor for the NSWMS Project). The questionnaire addressed issues of project

awareness and acceptance, current practices and opinions or views with respect to waste management. Opinions gave information on the desired future management practices with respect to storage, transportation, disposal, equipment needs and structures that need to be put in place, etc. Views were also collected on the proposed assignment of responsibility for the different waste management tasks.

2.1.5 Sampling

- The Cluster Sampling Technique was adopted for data collection. This method is sometimes referred to as the Multiple Sampling Technique. It involves:

(a) Stratification of the study population into clusters. [Since Kwaluseni is already zoned, further stratification was considered unnecessary as the zonation is in essence, some form of stratification].

(b) A random sampling of the clusters themselves (i.e. zones E, F, G and H have been chosen for assessment in Kwaluseni). The justification for choosing these zones to form part of the sample is that since half of the clusters are located beyond the area to be covered by the survey, as per the TOR, the consultant decided to take the remaining clusters as a representative sample size for clusters in Kwaluseni.

(c) Further divide each selected cluster into groups that will constitute the different study groups. For Kwaluseni, these study groups included the homesteads within the zones, business operations, schools, clinics, health motivators, and existing associations and organisations.

(d) Select a sample for each of the groups within a cluster. [A sample was then selected for each of these selected study groups.]

Step (d) was undertaken as follows:

<u>d(1) Sampling of households</u>

The number of homesteads or plots in each sampled zone was obtained from the RHMs who have them on record. The study could not cover all plots, so the consultant sampled 20% of the plots for the survey, mainly using personal judgement that this would give representative information. Since most of the population in each homestead/plot constitutes tenants in Kwaluseni, who obviously contribute significantly to solid waste generation, their inclusion in the survey was considered very important. As such, for each sampled plot, one tenant was randomly selected for interview, in addition to the plot owner. This information is then presented in Table A below.

Table A: Sampling of Households per Zone

Zone	**Number of Existing Plots per Zone**	**Sample Size of Plots per Zone (20% of zone plots)**	**Households Surveyed per Zone**
E	60	12	24 *(9)*
F	52*	10	20 *(23)*
G	68	14	28 *(28)*
H	77	15	30 *(30)*
TOTALS	**257**	**51**	**102** ***(90)***

*Notes:

1. figure is less accurate because the other Zone F RHM was not available due to illness.
2. numbers that were eventually sampled

d(2) Sampling of other study groups

Mainly due to time allocated for the survey, no formal sampling method was used to select the size of the other focus groups i.e. businesses, schools and the clinic. Instead, these were randomly selected to make a total of 18 for the whole of the study area.

Because of the limited number of associations and other groups in the area, their sampling was not done, but all those that were identified were involved in the survey.

2.1.6 Interviews

The Kwaluseni survey started on 17 February 2002 and was completed on 22 February 2002. Due to the large number of people that had to be covered and the time allocated to the assignment, two trained enumerators assisted in the survey.

a). Individual Interviews

With the aid of a structured questionnaire, one-to-one interviews were conducted with individual households, business operators, schools and the clinic. About 102 out of the 120 originally intended questionnaires were completed for this part of the survey.

b). Focus Group Discussions

Focus group discussions involved organisations, associations, politicians and other groups that are important role-players in the issue of solid waste management. Among these groups were the RHMs, the Kwaluseni Waste Management Association, which comprises mainly of landlords, some members of the King's Council and associations such as the "Asibambisane boMake" and "Sisusetfu" Women Associations.

These groups were met on different occasions. Information was gathered on how they view solid waste management as a problem in the area, how the problems could be solved, what equipment and what management structures were needed for effective waste management. They also gave information on what areas of external assistance they felt were needed. The Councillor (Mr Russia Mabuza) and some Rural Health Motivators were key informants and facilitators for these group meetings.

2.1.7 Coordination with other Consultants and Ministries

Informal discussions, information sharing and participation in some of the activities of the other technical consultants involved in the formulation of the waste management strategy for Kwaluseni formed an important part of data collection and analysis for the survey. Data analysis also made use of relevant information that had already been gathered by these consultants, such as types and volumes of waste generated, and the technical aspects of a proposed system for the area.

2.1.8 Data Analysis and Presentation

The data that was obtained from individual interviews was analysed in terms of the current waste management practices and the different views and opinions of respondents. The latter represents differences in opinions among the different groups (i.e. landlords, tenants and businesses) and the results are presented in Table B of chapter 3. Results of the focus group discussions were also used to guide the conclusions and recommendations of this report. Annexed to the report, in additions to the provisions of the ToR, is other important information that could not be included in the main text of the report.

Recommendations for the final design of the solid waste management strategy for Kwaluseni as well as the NSWMS Project are made, taking into account issues such as economic and financial implications, the local situation pertaining to the natural and social environments, etc.

2.1.9 Problems Encountered

Some respondents, especially landlords, were sceptical about the waste management project; that is they felt it was intended to deprive them of certain privileges associated with their residential status through the incorporation of Kwaluseni into the Manzini urban area. As a result, some of them totally refused to participate in the survey and others managed to participate after the consultant had allayed their fears.

Most respondents refused to give information on their sources of income and their disposable incomes. As such, an analysis based on income levels is not done in this report.

A few days into the survey, it was realised that the survey was not providing all the answers to important questions, as such the questionnaire had to be reviewed. Due to time constraints, it was not then possible to make re-visits, meaning that the originally planned sample sizes differ from those that were eventually covered in the survey (refer to explanations in Tables A and B).

2.2 APPROACH AND METHODOLOGY – SIPHOFANENI

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About halfway into the survey at Kwaluseni, the consultant reviewed the consultation process, e.g. the methods of data collection, usefulness of the questions as a means for collecting the required information, etc. The consultant then assessed the effectiveness of the way in which the interviews were structured in Kwaluseni in order to determine any lessons that could be learnt for the implementation in the Siphofaneni survey.

The survey mainly focused on the Siphofaneni business area, and no interviews were held with individuals from the residential areas that are at the periphery of this business area. Only observations were made of the activities in the residential areas in order to get information that would be important for the assessment and recommendations of the survey.

Initially, a structured questionnaire was designed for the survey, using experiences from Kwaluseni. However, this approach did not work very well as it soon became apparent on the first day of the interviews that most residents of the study area are business operators who are much opposed to questionnaires. The few that were initially approached made it clear that their main interest was in generating money, and therefore did not have much time to spare for answering questionnaires whose outcome may have no direct relevance to their line of business. Two main contributing factors to this attitude may have been inadequate awareness about the project itself, and lack of trust in people from outside the area and therefore not feeling comfortable in revealing their opinions to them.

As a result, the approach was changed, where data collection was mainly through informal discussions and focus group meetings with organisations, business owners (both formal and informal), government officials and other important stakeholders. The method for data collection was then implemented as follows:

2.2.1 Literature Review

Review of relevant documents and studies that have been undertaken on Siphofaneni was done. The main document reviewed for purposes of the Siphofaneni survey was the draft NSWMS Project document. The LUSIP Coordinating Office in Siphofaneni provided added sources of baseline information about the area. Other information was obtained from the MHUD.

2.2.2 Preliminary Assessment

Since the NSWMS Project and the associated waste management strategy pilot project were already known at the highest level of the DPM's office and the Regional Administration office in Siteki, the consultant did not contact these offices before the start of the survey, but went straight into on-site evaluation.

A brief site 'walk-over' was done by the consultant on 22 February 2002 in order to get a more detailed idea of the activities that take place within and around the study area that may become relevant for the survey. Informally, questions were asked from a few people that were met around the area about the area's local situation, its people and why and how certain things were happening.

The local Inkhundla office was also visited on this day, where an officer from the DANCED/SEA Project office introduced the consultant to the Indvuna Yenkhundla and other officials who would provide assistance during the Siphofaneni survey.

2.2.3 One-to-one Discussions

The survey in Siphofaneni started on 25 February 2002. One-to-one interviews were held with officials from the Inkhundla office, business owners, business operators who are on rented premises, the one school within the study area, the clinic and with executive members of the street vendors and the informal kitchens that the community normally refers to as 'emadladla'.

2.2.4 Focus Group Meetings

Group discussions focused mainly on the main waste generators i.e. the business groups, both formal and informal. The Inkhundla office and the Hon. MP, Mr Gundwane Gamedze were the main organisers for the meetings.

On the 26 February 2002, a business operators' meeting was held at the Siphofaneni Inkhundla offices. The meeting was attended by representatives from the informal businesses such as the fruit and vegetable market vendors, the two 'emadladleni' communities, and some other small business operators. Minutes of this meeting are attached as Appendix 4(1).

On the 28 February 2002, a briefing meeting was held at the Inkhundla offices with the Hon. MP and a number of Bucopho members. The meeting was briefed about the NSWMS Project and the associated surveys. Views and opinions were then gathered and the MP requested to assist in other information gathering exercises that were to follow.

On 10 March 2002, another meeting targeting mainly members of the Siphofaneni Business Association was held (see appendix 4(2) for minutes). This association consisted of owners of the larger and formal businesses in the area. These individuals are more influential in decision-making within the study area.

2.2.5 Coordination with other Consultants

Most of the activities that were undertaken as discussed above were mainly characterised by information sharing and collective participation with the consultant who is undertaking an assessment of the technical aspect of the Siphofaneni waste management system formulation.

2.2.6 Problems Encountered

Most people needed the assurance that the waste management project was not in any way intended to interfere with the status of Siphofaneni as a 'rural' area on SNL, thereby subjecting its residents to the system of paying rates.

It was very difficult to arrange meetings for the one-to-one interviews, especially with the larger business operators, even after making appointments. Some of them are employed elsewhere and others have businesses to attend to outside Siphofaneni. The Honourable MP and the Inkhundla were the most instrumental in helping to overcome this problem.

3. FINDINGS – KWALUSENI SURVEY

3.1 SITUATIONAL ANALYSIS – KWALUSENI

In addition to finding peoples views, the survey also involved the collection of data pertaining to the prevailing waste management situation in Kwaluseni.

3.1.1 Waste Types and Storage

According to the survey, organic waste (including food), plastic, paper, metal and glass are the main types of waste generated in Kwaluseni. Waste is either stored in metal bins/drums or disposed of directly into backyard pits. The bins/drums are normally placed outside within the premises. Plastic bags for packaging groceries are also used for storing waste. A few people do use appropriate refuse bags.

3.1.2 Waste Disposal and Treatment

Backyard pits are mainly used for the disposal of the waste. Waste in the pits is normally burnt and buried, and not much recycling is done. Some waste generators simply burn the waste inside the bins/drums. Organic waste such as tree leaves and branches can often be seen placed in heaps along the roadside, and is sometimes used to fill the gullies that have formed in some of the access roads. Some waste in plastic bags is indiscriminately disposed of along the streets, trading centres and the cemetery. Interviews revealed that sometimes vehicle owners transport loads of waste for disposal in the nearby Luntsantsama River.

The main reasons cited for the indiscriminate disposal of waste is inadequate space for the construction of disposal pits and general lack of responsibility on the part of waste generators.

3.2 DISCUSSION OF FINDINGS

Table B below is a presentation of the data obtained from the survey. It pertains to community attitudes and recommendations for the development of a Waste Management System for Kwaluseni. For each of the interviewed group of landlords, tenants and businesses, respectively, the percentages of the different responses were calculated and presented in Column 4. For example, of all the landlords that were interviewed, 83 percent feels that it is necessary to form and put in place an Authority that will manage and coordinate waste management issues in Kwaluseni, while the remaining 17 per cent feel otherwise. The last column gives percentage responses for all the different community categories that were surveyed, grouped together.

Table B: Results of Kwaluseni Community Consultation Survey (Opinions)

Results in this table are not presented according to the different zones because the zoning only became relevant for sampling purposes.

Issue	Respondent	Total Number	Percentage per category	Total Percentage
1.MANAGEMENT				
1a) Need waste management authority	Landlord Tenant Business	40 35 15	83% 83% 83%	83%
1b) Don't need waste mngt. Authority / no opinion	Landlord Tenant Business	8 7 3	17% 17% 17%	17%
2. WASTE STORAGE FACILITY				
2a) use refuse bags only	Landlord enant Business	6 4 7	13% 10% 39%	16%
2b) use any plastic bags/ no opinion	Landlord Tenant Business	0 6 1	0% 14% 6%	6%
2c)	Landlord	21	44%	

refuse bags & bin/drum	Tenant Business	15 2	32% 11%	35%
2d) any bags & bin/drum	Landlord Tenant Business	11 11 1	23% 26% 6%	21%
2e) use bin/drum only	Landlord Tenant Business	9 7 7	19% 17% 39%	21%
3. STORAGE PLACE				
3a) indoor	Landlord Tenant Business	7 10 2	15% 24% 11%	18%
3b) outside	Landlord Tenant Business	34 19 6	71% 45% 33%	55%
3c) central holding area	Landlord Tenant Business	1 1 6	2% 2% 33%	7%
3d) indoors and outside	Landlord Tenant Business	6 12 4	13% 29% 22%	20%
4. WILLINGNESS TO PAY & PARTICI-PATE				
4a) would buy refuse bags	Landlord Tenant Business	39 18	81% 74%% 44%	**72%**
4b) wouldn't buy refuse bags	Landlord Tenant Business	9 11 10	19% 26% 56%	**28%**
4c) would pay for waste mngt. services	Landlord Tenant Business	37 33 12	77% 79% 67%	**76%**
4d) wouldn't pay for waste mngt. services	Landlord Tenant Business	10 9 6	21% 21% 33%	**23%**
4e) voluntary participation N1=N-9=81, L=43, T=38	Landlord Tenant Business	9 4 5	21% 11% 28%	**18%**
4f) compulsory participation N1=N-9=81	Landlord Tenant Business	34 34 13	79% 89% 72%	**89%**
4g)	Landlord	36	75%	

want to recycle	Tenant Business	27 9	64% 50%	**67%**
4h) don't want to recycle/ not stated	Landlord Tenant Business	12 15 9	25% 36 % 50%	**33%**
4i) would buy refuse bags from WMC N2=53, L=32, T=21 n1=8(business)	Landlord Tenant Business	25 10 4	78% 48% 50%	**64%**
4j) would buy refuse bags from any other source N2=54 n1=8(business)	Landlord Tenant Business	7 11 4	22% 52% 50%	**36%**
4k) community decide how much to pay for services N3=53; L=31, T=22, N=18 (business)	Landlord Tenant Business	22 19 8	71% 61% 44%	**69%**
4l) landlord decide how much to pay for services N3=53	Landlord Tenant Business	6 0 0	19% 0% 0%	**8%**
4m) WMC or experts decide how much to pay for services N3=53	Landlord Tenant Business	3 3 10	10% 14% 56%	**23%**
4n) pay at post office / WMC office	Landlord Tenant Business	28 27 9	58% 64% 50%	**59%**
4p) pay at Inkhundla	Landlord Tenant Business	10 6 2	21% 14% 11%	**17%**
4q) Billing / incorporate in rent /no opinion	Landlord Tenant Business	10 9 7	21% 21% 39%	**24%**
5. FREQUENCY OF SERVICE				
5a) Pick up once a week	Landlord Tenant Business	11 13 5	23% 31% 28%	**26%**
5b) Pick up twice a week	Landlord Tenant Business	30 26 8	63% 62% 44%	**59%**

5c) Pick 3 times a week	Landlord Tenant Business	7 3 5	15% 7% 28%	**14%**
6. PICK-UP POINTS				
6a) skips/holding areas situated at agreed places	Landlord Tenant Business	20 10 8	42% 24% 44%	**35%**
6b) bins/drums within premises	Landlord Tenant Business	3 4 3	6% 10% 17%	**9%**
6c) by roadside next to premises	Landlord Tenant Business	24 28 5	50% 67% 28%	**48%**
6d) don't mind where	Landlord Tenant Business	0 0 2	0% 0% 11%	**2%**
7. WHO SHOULD TRANSPORT TO PICK-UP POINTS OR HOLDING AREAS OUTSIDE PREMISES?				
7a) Landlord decide N4=53, L=31, T=22 N4+n=53+18=71	Landlord Tenant Business	10 8 6	32% 36% 33%	**34%**
7b) Community collectors	Landlord Tenant Business	10 4 2	32% 18% 11%	**23%**
7c) individual waste generators to designated a person	Landlord Tenant Business	11 10 8	35% 45% 44%	**41%**
8. DECISION-MAKING RESPONSIBILITY N=52				
8a) community decide on locations & number of pick-up points per zone	Landlord Tenant Business	20 12 10	42% 29% 56%	**39%**
8b) Inkhundla decide on locations & number of pick-up points per zone	Landlord Tenant Business	2 0 4	4% 0% 22%	**6%**
8c)	Landlord	9	19%	

WMC decide on locations & number of pick-up points per zone	Tenant Business	9 4	21% 22%	**20%**
8d) Inkhundla secure disposal site	Landlord Tenant Business	23 20 7	48% 48% 39%	**46%**
8e) Community secure disposal site	Landlord Tenant Business	13 9 4	27% 21% 22%	**24%**
8f) government/WMC secure disposal site	Landlord Tenant Business	11 10 5	23% 24% 28%	**24%**
9. LOCATION OF DISPOSAL SITE				
9a) designated area within Kwaluseni	Landlord Tenant Business	22 21 2	46% 50% 11%	**42%**
9b) designated area outside Kwaluseni	Landlord Tenant Business	8 4 2	17% 10% 11%	**13%**
9c) disposal site already managed by municipality	Landlord Tenant Business	16 17 14	33% 40% 78%	**44%**

Key:

- L = Landlord
- T = Tenant
- B = Business
- N = sample size of households (L+T)
- n = sample size of businesses
- N1-N4 = sample sizes of L +T as and when they differ from N

Notes:

- Zone F=9T+14L; Zone E=5L+4T; Zone H=15L+15T; Zone G=14L+14T, unless otherwise indicated in the relevant cells on table B.
- Some, but not all, those who said they would not want to pay for waste mngt services felt it was not applicable for them to respond to 4k-4f; that is why N3=53<N=90
- Most businesses want waste to be picked up 3 times/week maybe because they produce more waste such as paper
- Minority or insignificant responses not included in the table
- ***4i-4j only those who said they would be willing to buy refuse bags were asked where they would prefer to buy them

3.2.1 Location of Disposal Site

The majority of respondents (44%) thought it would be good to use waste disposal facilities that have already been developed and are being managed and operated by either the Manzini City Council or the Matsapha Town Board.
The next preferred option is the construction of a waste disposal site at a designated area within Kwaluseni, the main reason being that it would be easier and cheaper to transport the waste to a nearby location.

Comment: Land availability within Kwaluseni for the construction of the disposal site may be a limiting factor. Implementation of this option would also require for care to be taken to ensure that the site is a reasonable distance from residential areas so that the spread of smell and any toxic fumes is kept at a minimum.

3.2.2 Waste Storage for Collection

The survey did confirm that from the residents' point of view, the use of appropriate refuse bags together with bins/drums is an acceptable storage method (35%). This method received the highest score as the remaining 65 percent was distributed among the other different storage methods. It is mainly the landlords that prefer this method, with about 44 percent of them indicating their preference for it. There was no significant difference in opinion between the landlords and the tenants, while business operators mainly prefer the use of the refuse bags only.

Comment: One reason why most businesses prefer the use of refuse bags only could be that some of them, especially from the formal sector, use their own transport, as some did indicate during the survey. This could mean that this group is able to transport the waste at convenient times before dogs and other animals can tear the bags.

The next widely accepted waste storage method is the use of any plastic bags together with the bins or drums, as opposed to restricting to the use of appropriate refuse bags. The main reason given for preferring the use of any other plastic bags was that residents might not always afford to buy the accepted refuse bags.

Before the pick-up dates, most residents, 55 percent, agree with the proposal that bins/drums be installed on each plot and that waste will be placed by residents of that plot only. Another significant percentage (20%), however, prefer to have the liberty to store the waste in bins placed indoors as well as outdoors. The disadvantage cited for not preferring to keep the waste indoors was that there is inadequate space in their rooms or houses to keep it, especially for longer periods of time. They preferred that waste be picked up at certain days per week, and that they themselves be responsible for transferring the waste to areas by the roadside next to their premises on the specified pick-up dates. Only 9 percent of all those inter-

viewed agreed to the current proposal that the pick-up points should be within the plots.

The next preferred option for pick-up points (35%) is placing the waste directly into skips or holding areas that would be situated at designated places within each zone. This exercise would have to be done by the individual waste generators themselves, as opposed to community waste collectors. The general feeling was that the community waste collectors be only responsible for taking care of the waste from the agreed pick-up points outside the premises to the final disposal site.

Comment: The general practice in urban areas serviced by the local governments in the country is that each plot or homestead places the waste by the roadside for pick-up by the councils waste collectors. This practice may have influenced the generally accepted feeling in Kwaluseni that the waste should be picked up from outside the plots/homestead boundaries. The disadvantage of this option in Kwaluseni would be the possibility of stray dogs and other animals striping the refuse bags and spilling the bins/drums before the collectors could come. This is especially so because Kwaluseni is a very wide area, with relatively poor road infrastructure, so that full coverage may be expected to take longer periods of time.

Placing the waste in skips is not a financially feasible option for implementation in Kwaluseni mainly because the initial investment cost for this facility would be too high for the community to afford, more so because a number of them would have to be purchased to service Kwaluseni. The recurrent costs for using skips would also be far beyond the means of the Kwaluseni community. The implications of using skips for cleanliness is that the area would be open to scavenging, especially by children, thus allowing for waste to be spilt on areas surrounding the skips and thus keeping the place dirty. Skips are mainly an advantage because they would allow communities to remove waste from their premises as soon as their bags or bins are full, instead of waiting for the pick-up dates even when waste generation is faster than normally expected.

3.2.3 Optional versus Compulsory Participation

About 89 percent of the people prefer the waste management system for Kwaluseni to be compulsory. There was no difference in opinion among landlords, tenants, businesses and other focus groups in this regard. Most of the participants at the Esibayeni Lodge workshop also shared the same idea. One main reason for preferring this method was the fact that it would make a difference in terms of cleanliness if the system were to be implemented uniformly. Another reason was that it would be possible for non-participating residents to undermine the waste management efforts by dumping waste in those areas that would be serviced by the system, or even on the surroundings of the holding areas. In the latter case, non-participants would have no incentive to eventually participate in the system.

Comment: If the proposal for a voluntary waste management system for Kwaluseni would actually be implemented, it would be difficult for waste collectors to discriminate against waste that would be placed at the pick-up points by non-paying residents. This problem could be solved by clearly marking the refuse bags used by the paying residents, so that only waste in marked bags may be picked up. However, this would not necessarily discourage non-paying residents from placing their waste bags at these points, thus undermining the efforts to keep Kwaluseni clean because a lot of waste would eventually be found lying along the streets with no-one to pick it up. A voluntary system, as opposed to a compulsory one, would not help much in keeping Kwaluseni cleaner by effectively solving the current solid waste management problems, which include indiscriminate waste disposal.

The waste management system for Kwaluseni would clearly have to be cost-effective, more so because Kwaluseni is generally a low-income area. However, the only difficulty would be to strike a good balance between cost-effectiveness and efficiency of the system. The currently proposed system of 'homestead-to-homestead' collection would be efficient in terms of keeping the place clean, by discouraging the situation where dogs spill the waste and non-paying residents dump the waste at non-designated areas. The proposed homestead-to-homestead method, does not solve the cost-effectiveness problem much because it may be time consuming to move from one homestead to the other, meaning that the community waste collectors would have to be employed on a fulltime basis to cover all homesteads.

3.2.4 Frequency of Waste Collection

Landlords, tenants and businesses all mainly prefer that waste should be picked up twice a week. On the one hand, the NSWMS Project consultants currently propose for a voluntary participation system for Kwaluseni. The survey, on the other hand indicates that 89 percent of the community wants a compulsory system.

Comment: Again, the system being compulsory means that a larger number of waste collectors would have to be employed to cover all of the Kwaluseni area twice a week, as proposed by the affected community in the survey. This would have cost-implications.

3.2.5 Willingness to Pay

The vast majority of respondents indicated that they would buy the refuse bags only if their purchase were to be incorporated into the Kwaluseni Waste Management System as a requirement. Those who said they would still not buy them indicated that they would not have enough money to buy the refuse bags. Even among the 72 percent who indicated that they would be willing to buy the refuse bags, are those who said they would do so only if the bags are affordable.

The principle that waste management services need to be paid for is generally accepted by the community; with about 76 percent score. Most of the 23 percent who said that they would not be willing to pay for the services cited affordability reasons.

Comment: The affordability issue would have to be addressed in the recommended system for waste management. This task, however, would not be very easy to accomplish because waste management is a very expensive exercise, and one may not realistically reduce its costs to the 'affordability' level without introducing the element of subsidy.

3.2.6 Mode of Transport

The one-to-one structured questionnaire survey did not ask any specific question about the preferred mode of transport for the waste to the disposal site. However, the overall survey, including focus groups discussions and individual interviews, revealed that most residents assume that appropriate trucks or tractors would be purchased and given as a grant for use in the Kwaluseni pilot project. The WMC would be responsible for the management of the vehicles, and the community collectors would load the waste directly onto the pick-up trucks. The proposed hand pull carts were often cited as unsuitable for use in Kwaluseni because of the relatively steep terrain and the generally poor condition of the roads infrastructure.

Comment: The preference for the above-mentioned mode of transport may have been influenced by the fact that a similar practice prevails in the municipal areas around the country.

3.2.7 Other Possible Stakeholders and their Roles

The involvement of the Kwaluseni Inkhudla for purposes of receiving payments for waste management services ranked lowest in the survey, with most people preferring to make payments either at the post office or at offices of the WMC.

3.2.8 Education and Awareness

All the different types of stakeholders consulted identified certain areas where they needed assistance in terms of education, information dissemination and awareness raising.

3.3 RECOMMENDATIONS - KWALUSENI

3.3.1 Centralised Solid Waste Management System

It recommended that for Kwaluseni, an authority should be put in place to formalise and coordinate the implementation of the proposed Solid Waste Management System. The already existing Kwaluseni Waste Management Committee could be given this responsibility. However, there may be need to review the membership

of the executive committee of the waste management association to ensure that it is adequate representative of the different genders as well as tenants. The latter are stakeholders in waste management and therefore their participation would be crucial.

3.3.2 Voluntary versus Compulsory Participation

On the strength of the pros and cons of the different strategies discussed above, it is recommended that the Kwaluseni waste management strategy should be a mixture of compulsory and voluntary participation; that is for purposes of the pilot project, the strategy should be initially introduced at selected zones, where it would be compulsory for all residents of selected zones to participate. The WMC would, in consultation with the whole community, have to select the zones for inclusion in the first phase of the pilot project. The implementation of the proposed system would then be gradually introduced in other areas, so that in the end, there is full participation.

The outcome of the 'community workshop' that was held on 14 March 2002 at Esibayeni Lodge concur with this recommendation. However, the system should allow for the voluntary participation of residents from other non-selected zones, so that all eager and willing residents are not delayed or excluded in the first instance by the selection procedure.

This recommendation would allow for the evaluation of the effectiveness of the proposed system within a smaller community, and any lessons learnt would then be used to improve the implementation of the system in the other areas within Kwaluseni. The selection of a few zones would also facilitate easier management of the system, especially in terms of monitoring and enforcing compliance to agreed standards of practice while the implementing Authority is still on a learning curve.

However, a problem would arise with the recommended system of staggered implementation of a compulsory system; that is it would be unfair from a social point of view to have certain members of an otherwise uniform society given preferential treatment. Willing community members within the zones that would not the selected for the first phase may also question the correctness of the selection procedure by the WMC, and this could create division and hostility among the community members.

It is therefore further recommended that the implementation of the proposed strategy be consultative, so that all affected parties are fully aware of the process and understand the decisions that would have to be taken.

3.3.3 Mode of Transport

The proposed use of the hand pull carts is recommended because it is relatively cheaper and easier to use. However, investing in improving the road infrastructure

in the pilot project areas to maximise the efficiency of the use of hand pull carts would have to be considered. This would involve gravelling of main access roads. This is recommended because it was realised during the survey that some sections of the road infrastructure have deep gullies from soil erosion and are impassable, especially in bad weather, mainly because of the plasticity of the soils and the general lack of gravel material on their top surface.

Bunkers may be used as holding areas, but it may be a good idea for the WMC to in a way ensure that there is no illegal disposal of waste in places around the bunkers. The WMC may want to consider contracting out the task of waste transportation from the bunkers to the dumpsite for a specified period, say 12 months, to willing individuals or organisations from Kwaluseni. This would provide for fair competition, encourage performance and control prices.

3.3.4 Willingness to Pay and Affordability

a) Purchase of refuse bags:
As much as most interviewees indicated that they would like to buy the refuse bags from the WMC, as originally proposed in the Kwaluseni Waste Management System, this report recommends that the WMC may sell the refuse bags in order to facilitate improved accessibility and also to increase its revenue base, but community members should have the liberty to use other sources for the purchase of the refuse bags. However, if the refuse bags would have to be marked by the supplier for identification purposes, then the option to use other alternative suppliers would fall away.
The use of approved refuse bags together with appropriate bins/drums is recommended because this would facilitate easier collection and loading, both from the pick-up points and from the holding areas. Lining the interior of the bins/drums with the refuse bags would also help prolong the useful life of the bins/drums and therefore economise on the replacement costs.

The survey did not reveal how much the people are willing to pay for the refuse bags mainly because this exercise would not have been very useful, as no matter how much people are willing to pay for goods and services, prices would still have to be influenced by the other market forces. This report can therefore only recommend that the WMC sell the refuse bags at prices that are comparable with prevailing market prices.

b) Payment for solid waste management services:
The technical work that has so far been done to try and come up with a suitable system, especially financially, is facing difficulties in identifying a level of costs that would be acceptable to the community while maintaining some environmental standards. This issue may take a longer time to address, and the strategy may have to be initially implemented at a loss. Possible future solutions would include gov-

ernment subventions to the operations of the WMC through the DPM's office. However, this solution could only be implemented after careful and detailed assessment has been done, to see how practical it is to implement successfully.

3.3.5 Involvement of Other Stakeholders

The involvement of the DPMs office, through the Kwaluseni Inkhundla may be critical with regard to the issue of payments for solid waste services. Even though only 17 percent preferred that payments be made at the Inkhundla, this report recommends that the Inkhundla should provide some office space for the WMC to operate in. This would help economise on construction and maintenance costs for dedicated WMC offices. The Inkhundla should also facilitate the acquisition of suitable land for the construction of a dumpsite.

The survey revealed that there are some individuals who are currently involved in collecting recyclable material within Kwaluseni. It is therefore recommended that the WMC and the Inkhundla should devise a strategy for encouraging recycling in the area. This would have some positive environmental impacts as well as also improve the economic situation of some of the Kwaluseni residents.

3.3.6 Site Acquisition

The WMC, with technical assistance from the relevant government ministries/ department such as the SEA, should identify a suitable site within the area for the construction of a dumpsite. If no suitable site is found, and alternative site within the surrounding communities should be identified. The Kwaluseni Umphakatsi and Inkhundla should be consulted for assistance in the acquisition of a suitable site for the construction of the dumpsite.

3.3.7 Education and Awareness

Education, information dissemination and awareness raising campaigns should form part of the Kwaluseni Waste Management System. These activities should target the WMC itself, individual households (both landlords and tenants), church groups, women groups, politicians and government officials including the Inkhundla itself. This may be implemented as discussed bellow:

i) Use the Inkhundla offices for holding meetings and workshops related to waste management.
ii) With the assistance of the SEA, the NSWMS Project office should coordinate the training programmes; that is organise the finance, provide suitable resource persons, etc.
iii) Organise the workshops such that they address the specific needs of the different target groups.
iv) Waste management awareness programmes should give information on the basics and importance of good waste management practices.
v) Training of future trainers should be done. The RHMs may play an important role as future trainers. They should therefore be capacitated

with more skills directly related to dissemination of information and enforcement of best practices for waste management.

vi) The WMC should receive additional skills that would include general management, financial management, management, bookkeeping, record keeping, etc.

vii) Information on the operations of relevant organisations and other government departments should be given to the people of Kwaluseni. This can be done at the community meetings that are usually held, through the radio, in churches, distribution of pamphlets and any other possible means. This would help the community in finding it easier to get any waste management related information that they may need now and in future.

4. FINDINGS – SIPHOFANENI SURVEY

4.1 SITUATIONAL ANALYSIS – SIPHOFANENI

In addition to findings on peoples views, the survey also reveals information of the current waste management situation in Siphofaneni, as presented below:

4.1.1 Waste Types and Storage

The main waste generators in Siphofaneni are the business owners from their operations as well as the customers. The main types of waste include plastic and paper materials as well as cans for soft drinks. The formal business owners mainly use bins/drums for storing their waste. Other small businesses, including the street vendors, store the waste directly into shallow pits next to their areas of operation. The community of the eastern 'emadladleni' (informal kitchens) is mainly involved in making home-brew and selling different types of food. They do not use any bins/drums for storing the solid waste before its final disposal.

4.1.2 Waste Disposal and Treatment

At the eastern informal kitchens, waste is either disposed of indiscriminately around the business area or thrown into a nearby seasonal stream, with the hope that when rains come, the waste is transported downstream away from their place of operation. Other business operators also reported that they dispose of their solid waste into the Usuthu River. Sometimes plastic and paper is burnt in backyard pits.

Most of the formal business owners use their own transport for taking waste to far away disposal areas. Scavenger pigs, goats, cattle and dogs usually the salvage some solid waste from the storage areas before it can be burnt or transported away, thus spreading the waste into surrounding areas.

There is no designated area for waste disposal in Siphofaneni.

4.2 FINDINGS AND RECOMMENDATIONS - SIPHOFANENI

The findings are based mainly on discussions held with the community (either as individuals or in groups) as well as from observation. The associated recommendations derive from the findings and professional judgement. However, most of the recommendations that are discussed are those that were eventually agreed upon by the consultant and the community during the consultations, while some of them would still need to be explained and further discussed with the community. Reference should be made to the minutes of the different community meetings for more detailed presentation of the survey results. These are in Appendix 4.

More detailed recommendations on the ideal waste management structure for Siphofaneni are included in Appendix 5, which has been developed both as a result of this survey and analysis done by the other consultant involved in the technical aspect of the waste management system development.

4.2.1 Awareness and Willingness to Participate

Most of the people are aware that waste is a problem in the area that needs to be solved somehow. General lack of an enabling environment for good waste management practices was often cited as a major problem. The community feels that the lack of a dumpsite, dust bins, warning signs, effective monitoring system and cooperation is making the waste situation worse in Siphofaneni.

Generally the people are willing to have someone help them out of the situation, but their willingness to pay is quite poor, especially among the informal business owners. This attitude may be due to the fact that they are not used to the culture of having such services provided for in an organised manner and also having to pay for the services. A lot of education and awareness creation is needed to change some of the negative attitudes of the Siphofaneni community.

4.2.2 Organisation and Management of Waste

The community feels that there is need for the formulation of regulations to guide and control people's behaviour towards waste management. These should be specific to Siphofaneni. The survey also revealed that a committee already exists whose functions also include waste management. This committee unfortunately is currently non-functional because of some administrative reasons. However, the survey has facilitated the nomination of people who would form a Siphofaneni Waste Management Committee (SWMC). This is representative of the different types of communities in the area. The general feeling is that an Authority is necessary for the management of waste in Siphofaneni.

The idea of zoning the area for easier management of solid waste was well accepted. The SWMC, once operational, would have to address such issues, with

technical assistance from the SEA. A recommendation was made that the SWMC should be the main people responsible for implementing the Waste Management Strategy and that the Inkhundla should provide some office space for the Committee. An undertaking was made by the Inkhundla to help provide the office space.

4.2.3 Technical Assistance Needs

The people think that all stakeholders should be given some training in solid waste management issues, as well as awareness creation. Education and awareness campaigns would also have to involve the bus owners/operators and other people in transit, mainly because these people also contribute a lot to the solid waste problems in the area. Technical assistance is also needed on the best equipment to be used for the system.

The survey also revealed that there may be a need for external financial assistance, not only for providing the necessary training, but also for the purchase of bins/drums, provision and distribution of leaflets and warning signs and the construction of a suitable dumpsite.

This report recommends that the identified training needs should actually be implemented and financed by the NSWMS Project. In order to cut down on costs, the Siphofaneni Inkhundla may provide a venue for holding some of the education and awareness-raising programmes.

The SWMC and the SEA may have to play a major role in educating and creating awareness on recycling practices and also providing information about organisations that buy recyclable material.

4.2.4 Waste Storage

It was recommended that the NSWMS Project should provide all the communities with bins/drums that should be placed at strategic places. The location of the bins would have to be determined by the owners of the premises. The community is expecting to have this facility donated by the Project.

The general feeling was that most of the business owners generate a lot of waste per day, especially in the form of paper and plastic. As such, they thought that holding areas should be constructed in each zone so that as soon as bins/drums are full, the individual generators take the waste to these holding areas for storage.

The idea of using refuse bags for all waste to be deposited at the holding areas was accepted. It is proposed that these recommendations from the community be implemented and that the Project should clamp the bins/drums high enough in each business area, so that animals cannot reach them with ease. The Project should further construct the proposed holding areas and make them animal proof.

4.2.5 Waste Pickup and Transportation

Community collectors would have to be hired from willing community members. Each collector would be responsible for waste management in one zone or as it may be decided by the affected parties. The Siphofaneni community that participated in the survey also recommended that the transportation of waste to a dumpsites should be contracted out to willing community members, for a specified period of time. However, the use of hand pulled carts to transport the waste to the dumpsites was well accepted, provided the sites would be located nearby. The community was not in favour of the idea of owning a dedicated vehicle for waste transportation because they thought it would be very expensive to maintain and that they might not have a suitable place to keep it.

Again this report recommends that these recommendations be implemented.

4.2.6 Willingness to Pay

Those community members who said that they would be willing to pay felt that they would have to collectively decide on the amounts to be paid per month. It was also agreed that the Inkhundla office, together with the SWMC should facilitate the opening of a waste management bank account that would facilitate payment for the recurrent costs of the system to be adopted.

This report recommends that the proposed system in Appendix 5 should be discussed further with the affected communities and the traditional authorities, so that its implications are all well understood, before it may be adopted for use. The system may be revised in consultation with the affected and interested parties.

4.2.7 Disposal Site Acquisition and Management

A recommendation was made that the MP and the Inkhundla would soon have to go to the relevant chiefdoms to request for the use of the sites that have been earmarked for use as dumpsites. It is recommended that the sites should be inspected and recommended by the SEA before they may be requested for use from the relevant authorities.

The dumpsite should be located well away from residential and business areas and it should be fenced off so that entry is controlled. Controlled entry into the dumpsite would help avoid illegal scavenging by people and animals. The use of the dumpsite may also have to be open to other interested people or groups who would not be part of the Siphofaneni Waste Management System. However, the SWMC, possibly with technical assistance from the NSWMS Project, would have to come up with a strategy to make such people pay for the use of the facility. This group of users would have to apply through the SWMC before they may be allowed to use the dumpsite. Otherwise it would be unfair to have members of the Waste Management Strategy pay certain fees while others are allowed to use some of the waste management facilities free of charge.

5. APPENDIX 1LIST OF PERSONS CONTACTED

LIST OF INDIVIDUAL PERSONS CONSULTED - SIPHOFANENI

NAME	ORGANISATION/ BUSINESS
1.Dladla Nhlanhla	Inkhundla Regional Office
2. Dlamini Mboni	SEA
3.Dube Collin	Mpisi Hardware
4.Gamedze Gundwane	Hon. Member of Parliament - Siphofaneni
5.Gamedze Toddy	Siphofaneni Inkhundla
6.Manana Jabulani	Siphofaneni Primary School (Head Master)
7.Matse Khanyisa	Siphofaneni Business Community Association
8.Mtsetfwa Nimrod	Inkhundla Regional Office (Asst. Health Inspector)
9.Nkhambule N. T.	Nkhamule Restaurant
10.Sikhosana Erick	BP Filling Station
11.Tshabalala Welile	Skonkwane Hardware
12. Market Committee Members	Sukumani Bomake Market Organisation
13. Emadladleni Committee Members	Emadladleni Business Community Organisation

6. APPENDIX 2 QUESTIONNAIRE

(Households, Schools, Clinics & Businesses)

6.1 GENERAL INFORMATION

1. Date:……..
2. Zone #……... Phone……..
3. Name of Respondent ……..……
4. Residential Status:
    a). Landlord or his/her relative (state relationship)
    b). Tenant
    c). School/Business
    d) Clinic
5. Have you lived in Kwaluseni in the past year?

YES
NO

6. Do you expect to live in the area during the next 2 years?
    a) YES
    b) NO
7. Tick your sources of income?
    a). Employed
    b). Self –employed
    c). None
    d). Other (state)……
8. Give an estimate of your monthly income from all your sources.
    a) Less than E300
    b) E300 – E700
    c) E750 – E1000
    d) E1000 – E2000
    e) E2000 – E3000
    f) Above E3000

6.2 AWARENESS AND CURRENT PRACTICES

Awareness:

9. Have you heard about the Waste Management Proposal for Kwaluseni?
    a) YES b) NO

10. Are you aware of the Waste Management Committee for Kwaluseni?
    a) YES b) NO

11. If "YES" what does it do?

……

……
……..

12. Are you aware of any organisations or individuals who motivate your community on good waste management practices?

a) YES b) NO

13. If "YES", name them

……..

14. Are you aware of any organisations or individuals who collect recyclable material such as glass and tins?

a) YES b) NO

15. If your answer is "YES", name them

……

16. Do you think waste is currently a problem on your premises? (explain)…….

17. Do you think solid waste management is currently a problem in Kwaluseni as a whole? (explain) ……

Storage and Handling Practices:

18. State the different types of solid waste that you normally produce in a week?

a) Organic waste b) Packaging material (plastic/paper)
a) Metal and glass d) Fuel and oil
e) Other (state)……

19. Do you store your waste somewhere before taking it to a final disposal site?

a) YES b) NO

20. What do you use to store solid waste before taking it to a final disposal site?

a) Use plastic bags obtained from stores and supermarkets as packaging material
b) Use refuse bags
c) Use both refuse/plastic bags and bins/drums
d) Store directly into drum or bin
e) Other (specify)
……

21. For how long do you store each kind of waste before you can dispose of it?

……..

22. Do you have any specific reasons for using the current method of storing the waste?

……
……
……
……

23. Who is responsible for supplying you with the storage material?

a) Self c) Other (specify).....
b) Landlord

24. Do you pay for the storage facility that you use?

a) YES b) NO

25. What are the main problems, if any, that you experience with the current method of storing waste? (tick as many)

a) Dogs and other animals spill the waste
b) Wind blows it off
c) It smells
d) Others (specify)
……..

26. Do you separate the different kinds of waste that you produce?

a) YES b) NO

27. Which types of waste do you recycle or re-use? (tick as many)

a) None
b) Bottles and tins
c) Organic waste
d) Food material
e) Other (specify) ……..…

<u>Disposal and Treatment Practices:</u>

28. Who is responsible for transporting your waste to its final disposal site?

a) Landlord
b) Self
c) Other (specify) ……..

29. Where is the waste finally disposed of?

a) In backyard pit
b) Transported to recognised disposal site in town or industrial site
c) In a community waste pit
d) In the river
e) Any place outside my premises
f) Other (specify) ……

30. How do you transport the waste to its final disposal site?

a) Walk c) Wheelbarrow/pull carts
b) By car d) Other.....

31. How is the waste treated after disposal?

a) Burnt c) Not treated in any way
b) Buried d) Other (specify).....

32. Who is responsible for treating the waste after disposal?

a) Self c) No-one
b) Landlord d) Other (specify).....

33. Do you have any problem/s with the location of your waste disposal site?

a) YES b) NO

34. If "Yes", what problems do you have with the present site?

a). Too close to our homestead.
b). Too far away
c). Difficult to access it
d). Other (specify)……..

6.3 OPINIONS AND SUGGESTIONS

Management Issues:

35. In your opinion, should there be an Authority for controlling waste management in your area? (Explain).

……
……
……
……
……
……

Opinions on Storage and Handling:

36. What containers would you most prefer to use for storing waste before placing at pick-up points?

a) In approved refuse bags
b) In any plastic bags
c) Both approved refuse bags and bins/drums
d) Use any bags and bins/drums

e) Other (specify) …….

37. Where would you most prefer to place solid waste while awaiting its pick-up date?
    a) Inside the house
    b) Outside the house
    c) At a central place
    d) Other (specify) ……

38. Would you be willing to pay for refuse bags if they were to be supplied to you?
    a) YES b) NO

39. If your answer is "NO" explain why……
……..……
…

40. If "YES' where would you prefer to buy the refuse bags?
    a) From the Waste Management Committee
    b) From any shop
    c) Other (specify) ……

41. Would you prefer to store the different kinds of waste separately?
    a) YES b) NO

Transportation, Disposal and Treatment:

42. How often do you think waste should be picked up for disposal?
    a) Once a week b) Twice a week c) Other (specify)……
43. Where do you think would be the best pick-up point for waste?
    a) In skips placed at strategic points along the roadside
    b) Collect from common bin/s within our premises
    c) Collect by the road side in front of place of residence/operation
    d) Don't mind where
    e) Other (specify) ……..

44. If the system of centralised pick-up points were to be finally agreed upon, who do you think should be involved in deciding on their location and numbers per zone?
    a) Affected communities
    b) Kwaluseni Waste Management Committee
    c) Inkhundla
    d) Other (specify) …….

45. If the system of centralised pick-up points were to be finally agreed upon, who do you think should be responsible for transporting the waste to its pick-up point?

a) Landlords to device strategy for each homestead
b) Community collectors
c) Other (specify) ……

46. Do you think there should be a common method of transporting waste to the central pick-up points?

a) YES b) NO

47. Give reasons for your answer above

……
……
……
……

48. Do you think it should be compulsory for all Kwaluseni residents to be part of an adopted waste management system?

a) YES b) NO

49. Who do you think should be responsible for securing a waste disposal site?

a) Inkhundla c) Community
b) Landowner d) Other (specify).....

50. Where do you think would be the best place to finally dispose of your waste?

a) At the place where we currently dispose of it
b) At a designated central area within Kwaluseni
c) At a designated central area outside Kwaluseni
d) At recognised disposal sites already managed by the local government of nearby municipality.
e) Other (specify) ……

Willingness to Pay and Participate:

51. If a waste management system were to be structured for Kwaluseni, who do you think should implement it?

a) Community
b) Inkhundla Centre
c) Don't mind who d) Other …….

52. Who do you think should be responsible for constructing a central waste disposal site?

d) Community
e) Inkhundla Centre
f) Don't mind who d) Other …….

53. Would you be willing to pay if your waste were to be picked up and disposed of on your behalf?

a) YES b) NO

54. Who do you think should decide on how much should be paid for waste collection and disposal?

a) Amount to be decided upon by all affected
b) Landlords to decide
c) Waste Management Committee
d) Inkhundla
e) Other (specify) …….

55. What would be the best way of paying for waste collection services?

a) Pay at an office or the post office
b) Pay at Inkhundla centre
c) Incorporate charges in rent
d) Billing system
e) Collected by agent or landlord from me
f) Do not mind which way.

56. Any other suggestions?

……
……
……

7. APPENDIX 3, DATA SHEETS FOR WASTE SURVEY

8. APPENDIX 4 AWARENESS RAISING APPROACH FOR PILOT PROJECT