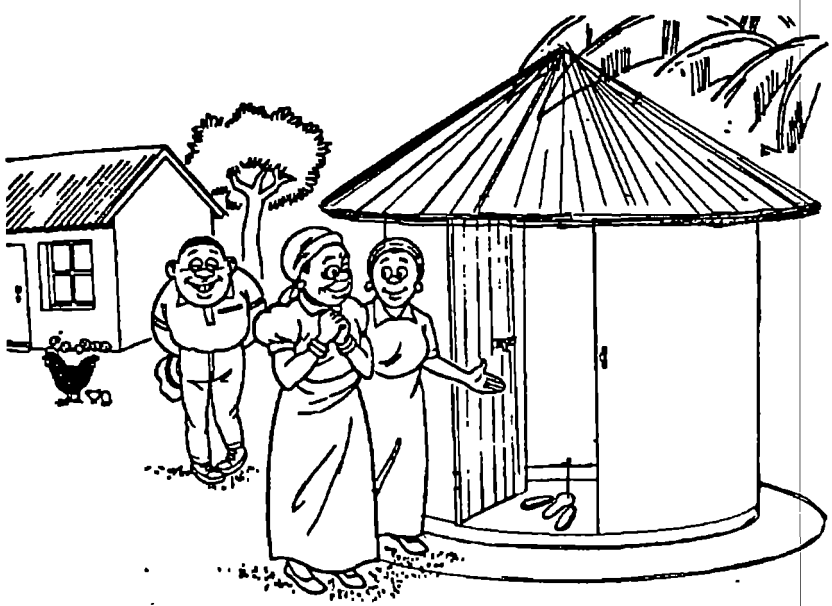
Appraisal of SIDA's Role in the Botswana National Rural Sanitation Programme



Can an affordable latrine be made attractive in Botswana?

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ABBREVIATIONS AND ACRONYMS

BOTVIP	Botswana type of the VIP-latrine
DCO	Development Cooperation Office of SIDA
KAP	KAP-study (Knowledge Attitudes and Practice)
Maendeleo	Maendeleo Development (Consultants)
MLGL	Ministry of Local Government and Lands
MOH	Ministry of Health
P	Pula, Local Currency (P1.00 is approximately USD0.5 or SEK3.15
SBI	SBI Consulting International AB (Consultant)
SEK	Swedish Cronor
SIAPAC	SIAPAC-Africa (Consultants)
SIDA	Swedish International Development Authority
UNICEF	United Nations Children's Fund
USD	US Dollar
VIP-latrine	Ventilated Improved Pit-latrine

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Draft appraisal report 910909

SUMMARY AND ACKNOWLEDGEMENTS

SUMMARY

The National Rural Sanitation Programme (NRSP)
The Government of Botswana, through the Ministry of Government and Lands, has successfully initiated a National Rural Sanitation Programme (NRSP), aiming at reducing diarroheal diseases in the country through the construction and good use of improved latrines. So far approximately 8000 latrines have been built, while the total need eventually must exceed substantially the 100.000 level.

Studies
In support of the continued and expanded implementation of the programme SIDA (Swedish International Development Authority) has initiated and funded (in cooperation with UNICEF) a number of studies aiming at assessing the sustainability and the cost-effectiveness of the programme:

1. The Cost Analysis,
2. The KAP-study and
3. The Strategy Paper.

Three optional strategies
Based on the findings from the Cost Analysis and the KAP-study, the Strategy Paper outlines three optional strategies:

1. Continued subsidized latrine provision using existing technology
2. Continued subsidized latrine provision using improved technology
3. Health education, improved technology and phasing out of subsidies

Principal findings from the studies
Findings from the studies indicate that the National Rural Sanitation programme together with two health education programmes presently implemented by the Ministry of Health through the Family Health Division are prone to have a considerable impact in the control of diarrhoeal diseases in the country. They show, however, also that for an enhanced impact and nationwide coverage considerable changes will have to be introduced in the programme:

1. The present level of subsidy is on long term not affordable if the programme is to encompass the majority of the households, especially the low income families.

2. The health impact of the programme (through environmental sanitation) will not be achieved if the low income families would not have access to improved sanitation.

3. A range of type latrines and other sanitation facilities (rather than one latrine type only) have to be introduced in the programme for Government supported implementation.

4. Intensified health education is required if the funds invested in latrine building shall eventually give the desired reduction of diarrhoeal diseases.

5. It is anticipated that the intensified health education should result in an increased awareness of the need of safe disposal of fecal matter. This in turn should motivate people to build latrines also with lower or possibly without any subsidies at all.

6. The availability of a handwashing facility close to the latrine has proven to have an important health impact. It is consequently recommended that simple facilities for handwashing should be integrated in the proposed latrine designs -- always.

7. The three programmes (having the same general objective of reducing diarrhoeal diseases) would all benefit from being coordinated geographically and timely in order to serve more efficiently the targeted population.

An internationally important experience

The support SIDA has given to guide the programme into new and more cost-effective ways to control the diarrhoeal diseases in the country has been very well received by the Government and UNICEF and an increasing interest for the new approach to be developed has been generated among officers involved in the programme. An official standpoint has, however, not yet been taken.

From an international point of view, what presently is happening in Botswana may have a catalyzing effect on other sanitation programmes in other developing countries, where governments or donor agencies have opted for non sustainable sanitation technologies, and where too little emphasis has been laied on sanitary education.

Correctly supported, the now initiated changes and the eventual output from the project may consequently have a very important impact on the progress of the whole low cost sanitation sector, presently suffering from that non sustainable sanitation programmes are falsely being labeled as successful.

The consultant therefore strongly recommends that the initiative towards a more cost-effective sanitation system that SIDA has created through financing the studies is continued through supporting a:

Development and Research Project

aiming at developing:
- ***alternative low cost sanitation technologies,***
- ***improved methods for***
  - ***health education and***
  - ***large scale implementation of improved sanitation***

with the object of:
- ***improving sanitation for all and***
- ***reducing required levels of subsidy through***
  - ***promoting simple and effective sanitation facilities***
  - ***intensified health education and***
  - ***enhanced community development***

as a base for
- ***sanitation policy formulation for affordable and sustainable sanitation in the rural areas of Botswana***

Executed through UNICEF and
executed by the Minstry of Local Government and Lands

MLGL implementation
Two ministries have been involved in the control of diarrhoeal diseases programmes: Ministry of Local Governments and Lands (MLGL) and the Ministry of Health. Given the progress so far achieved, and that MLGL has the most appropriate field staff, and that the MLGL already is assuming responsibilities for both latrine construction, and health education and for community development MLGL is recommended to become the implementing agency of the project.

Three districts
It is recommended that three representative and progressive districts are selected where the research and development experiences should be developed and field tested.

Three experts
It is suggested that SIDA should finance three posts in the Ministry of Local Government and Lands responsible for the development of suitable alternative technologies, promotional inputs, health education and community mobilization programmes:

1. One programme coordinator (continued funding of the existing post)
2. One ECI officer (Education, Information and Communication)
3 One project engineer

Three field coordinators
For the implementation of such a pilot programme it is proposed that three volounteers are recruited (and financed), one for each district.

Logistic support
It is also recommended that funds should also be made available for the procurement of project equipment, promotional and educational material required for the implementation of the pilot programmes in the three districts.

Operation, maintenance and subsidies
It is anticipated that Government through MLGL will provide funds for operation and maintenance of the vehicles as well as for general implementation of the programme, including subsidies as required.

Flexibility
Due to the experimental nature of the programme, it is anticipated that project officers will be given substantial freedom to experiment on a technical as well as on a social level, but that routines will be established within the programme, insuring that Government policies are not negatively influenced.

UNICEF execution
Given the interest UNICEF have shown in the new strategy and the importance of having an experienced international agency involved in the programme both for the "import" of experience from other countries and for the "export" of project experiences, it is recommended that UNICEF is asked to become the Executing Agency.

Consultancies and Evaluation
It is suggested that funds should be made available for required consultancy support, and that an informal (supportive) evaluation is made on an annual basis, while a major evaluation of the programme should be done after two and a half years of project implementation with the object of assessing project progress and the the need of continued support to the programme.

THIS REORT

It has also been stated in this report that the opinions presented are the opinions of the consultant only and do not necessarily reflect the opinion of SIDA, and that the report does neither commit SIDA nor UNICEF nor the Government of Botswana in any aspect.

ACKNOWLEDGEMENTS

For the completion of the appraisal,I am very grateful for the support I have received from the Ministry of Local Government and Lands and the Development Cooperation Office of SIDA (DCO). I am specially grateful to Dr Anthony Land, who spent so much of his time with me on field trips and in meetings, to Lars Olof Höök, and his wife Margareta for their preparation of the visit and the way I was received in Botswana and to Ms Liselotte Laurin and Ms Astrid Dufborg, Head of the SIDA-DCO for the interest they showed in the Programme. The interest and enthusiasm shown by field staff and in the Unicef office has been

strongly encouraging. The appraisal would not have been possible without all the background information and good ideas given to me by all the people I met during the visit. Though there seem to be a shared concept of how the programme policy shall be altered in order to serve a larger portion of the rural population, the responsibility for conclusions and recommendations remain my own.

INTRODUCTION AND BACKGROUND

INTRODUCTION

The Swedish International Development Agency, SIDA, has requested the assistance of SBI Consulting International AB through Mr Björn Brandberg (hereinafter called the consultant) to appraise the optional strategies for implementation of the National Rural Sanitation Programme, elaborated by Maendeleo (Botswana) for the Ministry of Local Government and Lands (MLGL), as presented in the report: NATIONAL RURAL SANITATION PROGRAMME, STRATEGY PAPER (DRAFT, June 1991).

The object of the appraisal has been to assess programme feasibility as a base for possible support towards the implementation of the programme from the Swedish Government through SIDA.

It is hereby stated that the opinions presented in this report are the opinions of the consultant only and do not necessarily reflect the opinion of SIDA, and that the report does neither commit SIDA nor the Government of Botswana in any aspect.

The appraisal took place in Gaborone Botswana 25 August to the 6 September 1991

The object of the appraisal report

Several studies have been made in regard to various aspects of the programme. This report does not pretend to give a complete picture of the programme but to penetrate key issues critical to the continued and expanded implementation of the programme and of special importance for the extent and contents of required external support.

BACKGROUND

The Government of Botswana has since long committed itself to the implementation of improved water supply and sanitation. In the field of water supply, the country has made remarkable progress, and the progress in the field of improved sanitation is also well ahead of many other developing countries. In comparison to what has been achieved in the water sector, however, the sanitation sector is seriously lagging behind.

The Government's commitment to improving sanitary conditions in the rural areas has resulted in an ambitious National Rural Sanitation Programme (NRDP) based on construction of high quality VIP-latrines with considerable Government subsidies. Up to today some 8000 latrines have been built. The total need, however, may exceed largely 100,000 latrines.

The programme was positively evaluated in 1988 by a team representing the Ministry of Local Governments and Lands (MLGL), UNICEF and the World Bank:
"Self Help Environmental Sanitation Project, End of Project Evaluation Report".

The success of the programme has led to a proposal prepared by the Ministry of Local Government and Lands and the Ministry of Finance and Development Planning (Sept 1990) for consideration by UNICEF/SIDA, with the object of embarking on a fully fledged National Rural Sanitation Programme aiming at building 22,000 VIP-latrines between 1992 and 1997.

THE NEED

Clearly confirmed

The need of improved sanitation is clearly confirmed. Diarrhoea is after acute respiratory infections the second most common disease in Botswana. (UNICEF: Children Women and development In Botswana - A situation Analysis, October 1989)

Number one cause of infant and child mortality

"Diarrhoeas are known as the number one cause of infant and child mortality in developing countries." (Okun, D.A.: "The value of Water Supply and Sanitation in Development: An Assessment of Health Related Interventions" WASH Technical Report No. 43, 1987, p.6, Table No 3.)

... that impair the quality of life

"Human excreta are the principal vehicle for transmission and spread of a wide range of communicable diseases. Some of these diseases rank among the chief causes of sickness an death in societies where poverty and malnutrition are ubiquitous. Diarrhoeas, for instance, are together with malnutrition, respiratory diseases, and endemic malaria the main cause of death among small children and infants in developing countries. [...] Other diseases such as hookworm infection and schistosomiasis, cause chronic debilitating conditions that impair the quality of life (however defined) and make the individuals more liable to die from superimposed acute infections." (Feachem, Richard G. et all: Health Aspects of Excreta and Sullage Management -- A State-of-the-Art Review. World Bank, Washington D.C. 1980)

Studies

Within the perspective of possible SIDA financial support, a number of studies has been carried out (with SIDA funding):

1. **Cost Analysis:** Ministry of Local Government and Lands, NATIONAL RURAL SANITATION PROGRAMME, COST ANALYSIS (Final report) prepared by Maendeleo (Botswana), August 1990.

2. **KAP-study**: Water Hygiene, Environmental Sanitation and the control of Diarrhoeal diseases in Botswana: A Knowledge, Attitudes and Practices Study, prepared by SIAPAC-Africa, Gaborone Botswana, June 1991

3. : Ministry of Local Government and Lands, NATIONAL RURAL SANITATION PROGRAMME, (DRAFT) prepared by Maendeleo (Botswana), June 1991.

Appraisal

An independent consultant (the undersigned) has been called in to make an assessment of the Botswana National Rural Sanitation Programme and advise SIDA on the extent and contents of possible future support to the programme. In this context the above mentioned papers have been studied and the programme achievements and potentials have been discussed with:

SIDA Development Cooperation Office in Gaborone,
Ministry of Local Government and Lands,
Ministry of Finance and Development Planning
Ministry of Health, Family Health Division
District Councils
UNICEF
Maendeleo Development
SIAPAC-Africa

This report with its appendixes constitutes the proceedings from the appraisal mission.

Important specific information

The KAP-study, based on interviews with over 4000 households,(Water Hygiene, Environmental Sanitation and the control of Diarrhoeal diseases in Botswana: A Knowledge, Attitudes and Practices Study, prepared by SIAPAC-Africa, Gaborone Botswana June 1991) provide important country specific information:

Important determinant of morbidity and mortality

Although child and infant mortality and morbidity rates drastically have dropped in Botswana over the last 20 years, diarrhoea continues to be an important determinant of under one and under five (years of age) morbidity and mortality in Botswana.

Non use of latrines may seriously jeopardize the health impact

16.1% of all under fives had an incidence of diarrhoea within the previous two weeks. Diarrhoea strikes all families independently of type of latrine used. [the disease is related to environmental hygiene where people not using latrines may seriously jeopardize the health impact.]

Health education is critical to any health impact

Any one preventive intervention, such as a pit-latrine or an improved water container, has little direct impact on the incidence and length of diarrhoea [Functional health education is critical to any health impact].

The diarrhoea incidence is positively correlated to the level of household cleanliness [Cleaner households have lower levels of diarrhoea.]
The availability of a hand washing facility near the pit-latrine had the most clear health impact (incidence 6.9% verses 16.0%)

Diarrhoea affects more seriously the ignorant and the poor
Diarrhoea is not a disease of the poor, but has more serious consequences when combined with malnourishment and poor knowledge of its treatment.

Children are a major cause...
Children under five as a rule do not use latrines.

... and the main victim
The younger the child the greater the number of diarrhoea incidences

Note: Comments within brackets [ ] are made by the consultant.

THE TECHNOLOGY

On the same time as the need and the urgency of the programme is indisputable, the technology and implementation methods have been subject to numerous discussions ultimately resulting in the .

The bottom line option

Winblad in 1984 suggested that a latrine building programme should not be necessary because of the hot and dry climate in the country. Control of diarrhoeal diseases should rather be achieved through intensive health education. In 1989 he suggested the construction of the so called "one day latrines" or "cat-pits", simple shallow pits covered with a sheet metal lid which should rise the temperature in the pit hence hampering the multiplication of germs fly maggots etc..

Ventilated Improved Pit-latrines

The programme, since 1980, has opted for a relatively expensive but functional VIP-latrine (Ventilated Improved Pit-latrine) of which some 8000 today have been built throughout the country. The cost is in the range of P1.400-P1,800. Implementation of the programme has been possible only through high government subsidies (around 70%, say P1,000 per family).

SanPlat Latrines

In order to reduce costs and to simplify implementation, a lowest cost sanitation system was developed in Mozambique during the early 1980s. Implementation has taken place in also in Malawi Tanzania and Angola. Up to today over 100,000 latrines of the mentioned type have been built and the interest is increasing.

Compressor and jack hammer excavation

The present policy to achieve reasonable pit volumes using compressor and jack hammer for excavation in rocky soils is expensive and requires substantial institutional support. Alternative designs should be considered for these type of

areas. In the worst cases emptyable double compartment latrines may need to be considered.

Round pits
Normally pits in unstable soils should be made round. Round pits are much more stable than rectangular ones and can consequently be made with larger volumes. If a central beam is used, the slab can be made in four sections, allowing for extra large diameters.

Rectangular pits
Rectangular pits with a short span are easy to cover with rectangular slabs. Where the soil is hard and stable and no pit-lining is required, rectangular pits can be used.

Pit-emptying
Eventually all latrines fill up. An increasing number of the Government promoted VIP-latrines are filling up, and it seems as if the average time for filling should be around 7 years. The present approach is to empty the latrines using normal vacuum tankers (as used for septic tanks). The system implies that the household adds water to the pit and stirs the content to achieve a liquid slurry which can be extracted by the vacuum tanker. The cost for pit-emptying is approximately P140 per latrine. Given an average interval of 5 years, the annual cost should be approximately P30 per year.

Rebuilding
Rebuilding of latrines each 7 years should cost approximately P1,000 per unit anticipating that material for a value of P400 can be reused. This should give an annual cost of P142 with today's prices. In comparison with rebuilding the existing VIP-latrines each 7 years at an annual cost of P142, emptying at P30 per year is a better option.

Self imposed sanitation contributions
In order to finance sustainable sanitation in the village a small fee could possibly be collected by for example the village health committee for pumping of latrines at regular intervals (say five years). If you are not contributing your latrine may not be serviced, or you may be subject to other reprimands decided upon by the village leadership or the kgotla. Collectively organized pit emptying would become cheaper and more effective than individual requests, especially in remote areas and smaller villages.

Technical implications
Presently, however, pit emptying is carried out at a rate of P5-P10 per latrine which is 90-95 % subsidy, a system which in the is classified as prohibitingly expensive. Still far much cheaper, though, than building replacement latrines. Access for vacuum tankers in unplanned villages may however be an other problem. Most probably we will have to live with the two systems. In any case it seems as if we would need to increase the volume of the pits (presently around 2 m3). The risk of ground water pollution in connection with deeper pits and pit-emptying (mixing fecal matter with water) must be studied. It should, also be remembered, that the pit emptying system is only in its very early days of being implemented and that a number of problems not yet have been fully assessed:

How many times can a latrine be emptied. Only a portion of the latrine contents will be drawn by a normal vacuum tanker. The medium to long term experiences has not yet been evaluated.

What are the environmental implications of disposal of the sludge?

There may also be a positive effect in recycling the fertile value of latrine sludge specially if mixed with agricultural waste and composted. Some sanitary and cultural problems may, however, need to be overcome on the way.

Ground water contamination

Water is a scarce resource in most parts of the country on the same time as it its availability is critical to life and development. Logically maximum attention should be paid to the conservation of the precious ground water. This must, however, not prevent us from protecting the people from the dangers of faecal matter in the surroundings. Deep boreholes are normally well protected by the soil layers protecting the ground water from germs. And if the germs from latrines should reach the ground water the danger is only as long as the latrine is in use. Pathogens normally survive short time in the hostile environment outside the human body. Closing the latrine will have effects within relatively short time. A more difficult form of ground water contamination is through nitrification form human and animal waste. Contamination of the groundwater by cattle excrement is possibly just as an important source. The best way to reduce the risks of groundwater pollution is most probably to place the bore holes away from the villages, where they can be properly protected and then pipe the water in to the villages. This solution is also recommended in the Water Supply Design Manual.

THE POTENTIAL IMPACT

Prone to benefit

The UNICEF report of 1989, Children Women and Development In Botswana, (quoted above) also shows that under one and under five [years of child age] mortality has dropped remarkably (to one third) after independence (Figure 5.2, page 109) and that the rate of improvement has been accelerating during the last years (1981-1988). It can consequently be concluded that the population of Botswana is prone to benefit from health promoting interventions.

DELIVERY METHODS

The programme implementation approach has in principle been based on the assumption that the household excavates the pit, that the Government completes the substructure, and that the household builds the superstructure, which then should be ready to use. For the delivery two methods have been used, the Council Delivery Method, and the Contractor Method. It seems as the Contractor Methods should be the less costly of the two, but has also implications on the design, which may curtail savings critically. To cut on costs, especially in remote areas, labour only contracts has been used. Self help construction have been used within the programme to some extent, but is not common.

Parallel programmes
In parallel with the NRSP programme, two other programmes support increased hygiene and health and control of diarrhoeal diseases in the rural areas, namely:

the Water Hygiene Education Programme (WHEP)and
the Control of Diarrhoeal Diseases Programme (CDD).

GENERAL OBJECTIVES OF THE PROGRAMMES

Though the three programmes all support the principle of controlling diarrhoeal diseases through improved hygiene, a functional sanitary education component seem to be missing.

National Rural Sanitation Programme (NRSP)
The general objective of the National Rural Sanitation Programme (NRSP) is to "reduce excreta related diseases by building pit-latrines through a subsidized self help scheme, and to provide facilities for the collection and disposal of refuse solid and liquid waste in rural areas, particularly in major villages." (from NDP7 Draft thumbnail sketch. LG144)
The programme is implemented through the Ministry of Local Government and Lands, Technical Unit, Rural Division.

Water Hygiene Education Programme (WHEP)
The programme focuses on showing people how to use and store standpipe water in a clean way, and promotes hand washing.
The programme is implemented by the Ministry of Health, through the Family Health Division

Control of Diarrhoeal Diseases Programme (CDD)
The programme concentrates on training health personnel on how to prevent and treat dehydration following diarrhoea.
The programme is implemented by the Ministry of Health through the Family Health Division.

THREE OPTIONAL STRATEGIES

In the mentioned above, three optional implementation strategies have been presented to achieve more efficiently the goals of the National Rural Sanitation Programme.

The immediate and shared objective of the strategies is to provide improved latrines for 60% of the population by the year of 2010. To achieve this objective three optional strategies have been discussed by the authors.

Option no 1
The first option is an extrapolation of existing policy, based on Government execution and subsidies construction of VIP-latrines (BOTVIP)

Option no 2
The second option is the same as the first one with the exception that the technology is assumed to be simplified and thus made cheaper.

Option no 3
The third option is a modification of the second where apart from the technical simplifications, a strong heath education component is included. It is anticipated that the health education should strengthen the awareness of the need for improved sanitation and motivate households to build their latrines also without subsidies, which subsequently could be phased out. The funds saved on subsidies should be used to finance the health education and social mobilization interventions.

The third option is strongly recommended by the authors of the Strategy Paper.

MAIN PROBLEMS

Phasing out

Option number three seems to be the most appropriate. Its introduction, however, will face serious obstacles. The ongoing programme, under implementation in all districts, is already perceived as national policy and has been very well received by the population and by local politicians. So far spending has been reasonable, if not even low, seen in a Botswana context. Simplifying the technology and cutting down on the subsidies may be interpreted as undermining Government health services to the population in the rural areas (while the urban population to increasing extent are benefitting from heavily subsidized water born systems). The phasing out of the existing technology as well as the subsidies obviously has to be done with very great care.

Affordability and Subsidies

In line with the general policy of redistribution of Government revenues, Government has opted for heavy subsidies in the provision of improved sanitation in the country. Government is subsidizing around 70% of the cost for construction of improved latrines in the country (P1,000-P1,500 per latrine depending on conditions). Maintaining this level of subsidy seems difficult, on the other hand it seems difficult to move away from the system from a number of reasons:

1. **Tradition**
   By tradition, Government subsidy is considered required in programmes with social benefits. In this case, this is actually well justified, as safe disposal of human excreta is a public need rather than a private need.

2. **Quality and durability**
   Government has opted to subsidize the substructure (pit with slab) and the fittings (sitting device and screened ventpipe) in order to guarantee the quality and durability of the latrine.

3. **Sustained functioning**
Government is also embarking on a (heavily subsidized) pit emptying programme using normal vacuum tankers in order to guarantee the sustained functioning of the latrines.

4. **Only the best**
There is also the tradition in the country, that semi good solutions should be avoided. While the second or third best solution is generally regarded with very great skepticism by both politicians and by the public the best is easily promoted, sometimes almost independently of costs.

Not affordable
The chosen approach has made Government responsible for construction and maintaining latrines in the rural areas of the country. With the ambition of providing equal services for all, the programme is becoming increasingly expensive and most probably not affordable to the country.

Transitional difficulties
Experiences from other developing countries, prove that latrines can be built much simpler and with much less subsidies. The problem is however, that the latrine building programme and the type of latrine has already become very well known and popular in the country, and very well accepted by the population. A drastic change may cause the whole programme to collapse. No more subsidies -- no more latrines, and the existing ones will eventually fill up and cease to function.

Awareness making through intensified health education
The KAP-study shows clearly that a drastically intensified health education is an absolute need if substantial health benefits should be drawn from the programme. The authors of the assume that the increased health education would motivate (all?) households to build latrines and that social mobilization would give the required push in the move from "Knowing to Attitudes and Practice". The difficulties in this necessary process must not be underestimated.

Self built latrines
An indicator pointing in a positive direction is that a large number of families have built latrines without any support from the Government programme. A technical and social documentation of these have regrettably not been included in the studies.
It can however, be assumed that the main reasons for building the latrines have been privacy and convenience and that the experiences from other areas (the mines, the cities , South Africa etc.) has had a catalyzing effect. The wish to be modern may be another reason. There is obviously a trend of latrinization in Botswana which will remain independently of any Government programme. It can however be assumed that the spontaneous latrine building will take very long time to reach the poorest in the rural areas. Reliance on spontaneous latrine building is consequently not feasible as a programme strategy.

A poverty problem
In spite of the very high Government subsidies, affordability in the ongoing programme is a serious problem for large groups already today. Strange enough the affordability problem seems to a high extent to have been self chosen.

> Though only P30 (half the value of a goat) is required to have the sub-structure completed by the Government and in spite of that the latrine can be completed with traditional materials and self help labour only, the families chose to have the superstructure built with cement blocks and with a sheet metal roof. The work is normally done by a local contractor and the cost is about P500 (half a cow). Very few latrines have been completed in a traditional way. This is specially astonishing as the families at the same time are building their dwelling houses in traditional materials (mud walls and thatched roofs).

Reasons for non completion
It has been mentioned that a substantial number of latrine substructures are laying idle due to non.completion. It is suspected that the the high rate of incomplete strictures depend on:

1. that demonstration latrines have been built in permanent materials, not affordable to the lower income groups, but creating the image of what a good latrine should look like. Efforts from the programme officers trying to promote the use of traditional material has had very little effect. The example of the large number of already built latrines is stronger.

2. that relatively wealthy and middle income families have copied the demonstration latrines. Not being able to build in cement blocks (and sheet metal and a carpentered door etc) is taken as a proof of poverty (stigma) and that people therefore prefer to "wait until they can afford" to complete the superstructure.

Social Mobilization
Discussions with MLGL, UNICEF, the Health Education Unit and others indicate that health education alone is a solution on long term only, and that the Social Mobilization strategy need to be thoroughly analyzed through practical research experimental programmes, as there is an obvious need of moving towards affordable solutions and implementation strategies.

Community development
Presently about 60% of the rural population have no latrines at all. The need of improved sanitation is not in the first hand a personal need, it is a community need, as the level of environmental hygiene eventually will depend on the last ones to improve their hygiene and on the diseases prevailing in the area, the good hygiene of all should become a felt need on community level. It is therefore recommended that the programme addresses communities rather than individual households, (which they to a high extent presently are doing). Registration to the project for improved latrines could for example be made on ward level, when <u>everybody</u> in the ward are prepared to build improved latrines.

Subsidy targeting at village level
Presently subsidy on building the latrines are individual benefits. In the proposed project the subsidy could be negotiated with the village leadership, aiming at 100% coverage. It would then be the responsibility of the village leaders to define how the subsidies should be distributed in order to fulfil the goal of 100% coverage. Well managed it should be the village leadership that should define the level of sanitation in the village.

Minimum standard for self selected targeting
Not all can afford the same type of latrine, and not all are happy with minimum standard (if made simple enough to be hygienic and safe, but excluding everything else). Such a minimum standard latrine could possibly be heavily subsidized without burdening the programme economy too much. Not everybody should opt for such a latrine, for others it may be the only affordable solution

A political solution
It has been concluded that some form of latrine, used by all in each household is required, but not sufficient, for the control of diarrhoeal diseases. Experiences of subsidized implementation of the VIP-latrines have proven impossible to extend to the whole population. A minimum standard latrine possibly subsidized to some extent in lieu of subsidizing an insignificant number of too expensive latrine could be a possible solution. This may also be a compromise that could attract responsible politicians already convinced that subsidies for all is a requirement for the implementation of programmes with social benefits in the country.

Health education and health impact
Independently of any latrine building programme, a functional health education programme is required. The KAP-study shows clearly the health impact of general cleanliness (reduction from 25% to 13% incidence) and of availability of water for hand washing close to the toilet (reduction from 16.0% to 6.9% incidence).

Latrine types
Through the KAP-study it has been documented that the type of latrine as such has no clear (if any) health impact (The study actually gave a higher incidence for VIP-latrine households than for Non-VIP-households but this is probably due to the target group achieved and on false expectations of the miracle the new latrine should provide). Given that the high cost , limited affordability and the complexity of Government involvement which has incurred actually depend on the latrine type promoted, reconsideration of Government policy is strongly recommended. The authors of the Strategy Paper suggest that a range of technologies are promoted suitable for various income groups.

Rate of implementation
With the present rate of 3,000 latrines built per year, the programme does not even cope with the population growth in the country. (Estimated to above 7,000 new households per year) hence never reaching any significant coverage of latrines in the country.

Government contribution
In relation to the subsidies, Government still maintains an ambivalent attitude to subsidies. Though the general policy is to reduce subsidies in favour of cost

recovery systems it has been experienced that revenue collection in rural areas may cost more than what is collected. Subsidies should, however, be targeted in order to benefit the low income groups. It can be anticipated that Government for many years to come will continue to subsidize sanitation in rural areas. A high level of national contribution in the financing of the programme can consequently be counted on.

Loans
Loans for building of latrines have been discussed and so far rejected in the programme. Reference has been made to the high default rate within the SHHA programme (SHHA = Self Help Housing Agency working in the peri urban areas of Gaborone, Francistown and Lobatse).Still, loans have successfully been used in Lesotho and the rural population may be more prone to repay their debts than their urban counterparts. Given that improved sanitation is a public interest on the micro level, collective loans could be a possibility on village or ward level. Rather than giving the money in heavy subsidies that in the long run are not affordable, status latrines could be financed on loans, hence not burdening the Government budget.

Public and institutional latrines
Latrines are required for institutions and public places also. Though the subject is complex and may be connected with serious management problems, the hygiene in institutions and at public places must eventually be addressed. Given that the operation and maintenance of public latrines will only function when the surrounding neighbourhood is served with household latrines, community construction of public latrines could be used as an incentive for complete coverage.

Awareness and motivation building
Awareness and motivation building seem to become the key issue in the continued implementation of the programme, specially if we want to advance along the ideas of the 3rd option in the Strategy Paper. Discussions with the resident representative of UNICEF indicate that they are interested to put in increasing efforts into conciencialisation of Batswanas at all levels in assessment of "where they are" in relation to what they know and what they do in terms of improved sanitation and hygiene practices.

Community participation
Drawing on the conviction that there will be a considerable demand for improved latrines created through the health education and social mobilization programmes, increased levels of community participation can be used as a tool in negotiating allocation of limited programme funds and resourses, aiming at accelerated programme implementation. Instead of working with individual households complete villages and wards should be addressed and stimulated to face the problem of diarrhoeal diseases (and dignity). "Do we consider ourselves as being animals defecating all over or are we civilized people caring for the health of our children."

Gender and age awareness and children training smaller children
Women and children are the key groups in improving the environment. Men are very important as decision makers and builders, but the way to a mans decision often goes via the conviction of a woman. Women are also the health educators of children. Given that mothers often leave elder children to take care of smaller

sisters and brothers, mothers should be trained in the first hand as sanitary educators, and not as bottom of the line recipients of sanitary instructions. A trainer to train the relation-building between the health staff and the mothers could also have a catalyzing effect on the exchange of information. A top down education process, so common in developing countries, always hampers the necessary feed back of basic information back into the sanitary education system.

Schools
School children are often conveyors of change in developing countries. And in a very few years they will have their own children, heading new households. A new generation, presently being formed must start with better knowledge than their parents once had. Education is the true spearhead into the future. Of paramount importance, for the long term output of the programme, is close cooperation with the schools and the curriculum writers in the Ministry of Education.

The poor
The complex situation of the poor, poor knowledge and poor economy, need to be addressed specifically. In this sector, subsidies may be required, but not seen as the only way out. Also poverty can be defeated.

Programme management and administration
With the existing approach, with Government assuming the responsibility for the sustained functioning of the programme, management and administration will become a major bottleneck, eventually hampering the progress of the programme. Considering that management already is considered a major development obstacle, Government management skills should preferably not be tied into a vast latrine operation programme (latrine-construction and emptying). Spontaneous innovations and private sector initiative must be given place within the sector of low cost sanitation.

RECOMMENDATIONS

An internationally important experience

The support SIDA has given to guide the programme into new and more cost-effective ways to control the diarrhoeal diseases in the country has been very well received by the Government and UNICEF and an increasing interest for the new approach to be developed has been shown by officers involved in the programme.

Seen in an international perspective, what presently is happening in Botswana may have a catalyzing effect in the development of other sanitation programmes in Africa where governments or donor agencies often have opted for non sustainable sanitation technologies, and where too little emphasis has been laid on sanitary education.

THE PROJECT

The consultant strongly recommends that the new approach towards a more cost-effective sanitation system that SIDA has initiated through financing the studies is continued through supporting a research and development project aiming at providing a firm base for policy writers in Botswana (and in other developing countries) how affordable sanitation technologies can be introduced for large scale implementation, where non affordable technologies initially have been adopted as policy.

MLGL implementation

Two ministries have been involved in the control of Diarrhoeal diseases programmes: Ministry of Local Governments and Lands (MLGL) and the Ministry of Health. Although no formal decision has yet been taken, both ministries seem to support the ideas of Option 3 in the Strategy Paper, giving emphasis to health education for increased health impact and increased household contribution to the programme, hence paving the way for reduction of subsidies, which possibly could become targeted towards lower income groups. Given the progress so far achieved, and that MLGL has the most appropriate field staff, and that the MLGL already is assuming responsibilities for both latrine construction, and health education and for community development MLGL is recommended to become the implementing agency of the project.

Three districts

Given the importance of having a realistic base for the eventually revised policy, it is of importance that geographical and economical differences are taken into account. It is consequently recommended that three representative and progressive districts are selected where the research and development experiences should be developed and field tested.

Three experts

It is suggested that SIDA should finance three posts in the Ministry of Local Government and Lands, in charge of the development of suitable alternative technologies, promotional inputs, health education and community mobilization programmes:

1. one **Programme Coordinator, CTA** (continued funding of the existing post) responsible for continued and expanded programme implementation.

2. one **EIC Officer** (Education, Information and Communication) responsible for the research and development of the software of the programme such as community development, health education, promotion and marketing.

3 one **Project Engineer** responsible for the technical research and development aiming at identifying the range of suitable technologies to be promoted within the programme.

Three field coordinators
For the implementation of such a pilot programme it is proposed that three volounteers are recruited (and financed), one for each district.

Logistic support
It is also recommended that funds should be made available for the procurement of project equipment, promotional and educational material etc required for the implementation of the pilot programmes in the three districts.

Operation and maintenance
It is anticipated that Government through MLGL will provide funds for operation and maintenance of the vehicles as well as for general implementation of the programme, including subsidies as required.

Flexibility
Due to the experimental nature of the programme, it is anticipated that project officers will be given substantial freedom to experiment on a technical as well as on a social level, but that routines will be established within the programme, securing that Government policies are not negatively influenced.

UNICEF execution
Given the interest UNICEF has shown in the new strategy and the importance of having an experienced international agency involved in the programme both for the "import" of experience from other countries and for the "export" of project experiences, it is recommended that UNICEF is asked to become the Executing Agency.

Consultancies and Evaluation
It is suggested that funds are made available for required consultancy support, and that an informal (supportive) evaluation is made on an annual basis, while a major evaluation of the programme should be done after two and a half years of project implementation with the object of assessing project progress and the need of continued support to the programme.

Uninterrupted programme implementation
Given Government commitment to the ongoing programme the popularity and the success achieved so far it is in the first hand recommended that programme implementation continues uninterrupted following the present policy with a relatively costly design and Government subsidies.

Testing of alternative strategies
Considering the cost implications on long term, alternative strategies, as outlined in the , should be elaborated, aiming at increased community participation. This development work should be done in parallel with the continuation of the ongoing programme. When the alternative strategy has been proven successful, Government subsidies to the programme could possibly be phased out liberating resourses for increased health education and promotional support, eventually leading to a approach where sustainability of the programme is achieved through household self help financing rather than through Government subsidies.

Promotion and marketing
It is anticipated that intensified health education should become the main mobilizing factor in the programme. On short term however it is recommended that a promotional programme should accompany the construction programme mobilizing households to participate. It is also anticipated that modern marketing methods could be used to promote programme features.

Health education
Good latrines is one of the necessary conditions for improved hygiene and health. Latrines alone, however, will not give better health. The KAP-study as well as experience form other countries show that improved health is acquired through the combination of the three factors, clean and plentiful water supply, improved sanitation and health education, where the health education should become the factor of change in household behaviour, while water and latrines are the required physical means required for a clean and healthy environment.

Integration
For maximum health impact of the respective programmes (NRSP, CDD and WHEP) and for cutting of overheads, an integrated approach is recommended, where implementation is coordinated in time as well as geographically. Acting at the same time and on the same place together with the same people will reduce costs for overheads, at the same time as it is avoided that confusing messages are transmitted and hence reducing more effectively the incidence of diarrhoea in the area.

Research and development
Reduction of total costs can be achieved through application of simplified latrine building technologies, self help building and/or use of labour only contracts. It is however recommended that new technologies and new delivery systems are introduced only after having been field tested thoroughly. For the effective implementation of alternative technologies implementation is anticipated to be accompanied by improved and intensified functional health education and community development, which should be developed as part of the suggested project.

Funding
Implementation based on the present policy has during the last years been carried out based on Government funding. Government funding of the subsidized programme is consequently recommended to continue. In the transitional phase, additional funds will be required for applied research and development including pilot testing of alternative strategies. Funding for these activities are recommended to be applied for from external sources (e.g. SIDA), hence maintaining the level of Government funding in spite of the recommended research and development work being carried out. On medium to long term it is consequently anticipated that Government together with the household would carry the cost for the continued implementation of the programme.

Project preparation
A project document is suggested to be prepared defining general and specific objectives of the project activities, inputs and outputs and the anticipated end of project situation etc.

Gaborone in September 1991

PEOPLE CONSULTED.

From SIDA, Gaborone
Ms Liselotte Laurin, Head, SIDA-DCO
Ms Astrid Dufborg, New Head, SIDA-DCO
Mr Lars Olof Höök, Programme Officer
Ms Margareta Husén, Programme Officer

From the Ministry of Local Government and Lands
Mr B Dintwa, Undersecretary, Rural
Mr Anthony Land, Programme Coordinator

From the Ministry of Finance and Development Planning
Mr Mokwadi Mothlako, Planning Officer

From the Ministry of Health,
Family Health Planning Unit
Mr L.T. Lesetedi, Head of Family Health Division
Ms Tuelo Mphele, Ag Chief Health Education Officer
Ms Tshegohaco Motsemme, Control of Diarrhoeal Diseases Officer
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Mr Thebe A Pule, Chief Health Inspector
Mr S.A. Goma, Senior Health Inspector
Mr Jonie T. Bathlopi, Health Inspector

From the District Councils
Mr Erasmus Valéma, Senior Health Inspector
Mr Vincent Orapeleng, Senior Health Assistant
Field staff from the project

From UNICEF
Ms Sheila Tacon. Representative
Mr Isiye Ndombi, Project Officer Health

From Mandeleo
Tyrrell Duncan, Economist

From SIAPAC-Africa
David S. Cownie, Managing Director

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Mission Agenda

Saturday 24 Aug
Arrival to Gaborone from Nairobi
Report reading and preliminary programme analysis

Monday 26 Aug
Introductory meeting: MLGL/SIDA
Preliminary discussion With Mr T. Land. (Programme Coordinator)
Programme analysis

Tuesday 27 Aug
Field trip to Southern District (all day)

Wednesday 28 Aug
Meeting with MOH, Family Health Division on health education possibilities and constraints
Meeting with Maendeleo on the Strategy Proposal and the Cost Analysis
Follow up discussion with Mr T. Land.
Programme analysis and preliminary report work.

Thursday 29 Aug
Meeting with UNICEF on programme objectives, strategies and institutional framework.
Programme analysis and preliminary report work

Friday 30 Aug
Meeting with SIAPAC on the KAP-study and on the potential impact of the Strategy Proposal prepared by Maendedleo.

Saturday 31 Aug
Preparation of preliminary conclusions and recommendations for discussion with MLGL.

Monday 2nd Sept
Field visit to KfW project - Palapye (some 100 km north of Gaborone).
Discussion with field personnel about he progress of the ongoing programme and the feasibility of possible low cost alternatives as a complement to the latrines presently being built.
Household visits to see programme latrines as well as non programme latrines and ad hock interviews with community members.

Tuesday 3 Sept
Participation in a sanitation and community mobilization workshop within the KfW funded low cost sanitation project in Palapye.
Return trip to Gaborone

Wednesday 4 Sept
Second meeting with UNICEF on transitional strategies and institutionalization.

Thursday 5 Sept
Meeting with the Undersecretary Rural, Ministry of Local Government and Lands on Ministry involvement
Meting at Ministry of Finance and Development Planning on programme financing.
Meeting at the Environmental Health Unit, Ministry of Health, on programme strategies
Preparation of report

Friday 6 Sept
Wrap up meeting at SIDA-DCO
Follow up amendments on appraisal report
Return trip to Sweden (6-7 Sept)

Note: Before arrival to Gaborone approx two days have been spent on studying of background papers as listed in Terms of Reference. One day has been spent on editing of final report