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PROJECT SAMBIZANGA:

INTERIM REVIEW AND ASSESSMENT

May 1994

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Draft Report
16 July 1994

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Much has been achieved in the 2 years of this second phase of Project Sambizanga in very difficult circumstances. Twenty-one standpipes have been constructed, 385 latrine slabs have been produced and 228 latrines built. Two health posts and one health centre have been rehabilitated as the major points of local health services in the community. The community's confidence in the health services has improved, increasing numbers of patients are attending the health centre, and the competence of the staff of the health centre has improved. Thirteen training courses in both physical and social development, (such as roof and latrine construction, water chlorination, immunisation, accountancy and community organization) have been organised for total of 169 people.

All the activities were accomplished using a community-linked strategy involving community participation and the strengthening of local community capacity for more sustainable development. Dialogue and surveys with the community identified felt needs and guided the activities to be pursued; activities have emerged from the felt and absolute needs of the community. A strength of Project Sambizanga is that it combines physical and social development by linking services such as water, improved latrines, and waste disposal with preventive and curative health care, cholera and water chlorination programmes. Seventy one Activistas (community development workers) from the community have become an important link to the community and they are on the front line of the activities there. Local groups such as NGOs and CBOs are increasingly collaborating in activities, and new organisations are being formed due to the initiative of a group of activistas. There are good relations with the Public Health Department of the Ministry of Health at provincial (city) level, and improving relations with the City Water Company.

Project Sambizanga has registered many achievements in the rapidly changing circumstances of Angola, because it has strong community links, because it has learnt from the context and experience, and because it has been flexible enough to take new opportunities. Now into the latter phase of the Project, several issues and opportunities need urgent attention.

ISSUES AND OPPORTUNITIES

Clarifying the Model

One of the objectives of Project Sambizanga is "to develop a community-based model for interventions" that is sustainable and replicable by local organisations. As the Project enters the second half of this phase, it becomes more urgent to focus on this objective. A model is needed with clear rationale and conceptual foundations, organizational structure, and operational

procedures. It must demonstrate that it offers technologically, organisationally, and financially sound ways to achieve basic and critical physical and social improvements related to the health of the community. It must be possible for the model, albeit with some modifications, to be adopted by local organisations to sustain and replicate the work beyond the life of the Project. It must be possible to demonstrate to the local community and to the other local organisations in a clear, easily comprehensible and persuasive manner the utility of this model.

While some of this model is implicit in the Project, much of it remains to be stated explicitly, and still more of it remains to be developed and for its appropriateness, sustainability and replicability to be tested. The issues discussed below, if addressed, should help the Project in developing this model.

Developing Community Organisations

A "community-based model" requires a community-based organizational structure that can develop and implement it. The Project's approach so far has been community-linked rather than community-based. It uses an individual rather than a group-based approach to make linkages between the community and the Project. Community members as individuals serve as Activistas; residents are approached as individuals or households to help in digging latrines, to serve as water monitors, or to accept "house-to-house-visits" to determine felt-needs and impart health education. What has been achieved has been a very good extension service, transmitting information effectively in both directions.

But, for example, the community has not been involved as a group in issues surrounding the water standpipes. As a consequence, those interviewed did not know who the water monitor for their local standpipe was, nor did they feel any responsibility for its upkeep. Given that key Project activities (standpipes, health centres) are "area-based" or "user-group" oriented, and serve particular catchment areas of residents, "area-based" or at least "user-group-based" community organisations appear to be most appropriate.

The community organisations with which the Project works, such as church groups, may not represent a significant number of residents in any catchment area nor may they represent most of the users of the specific services provided. They do provide a link with part of the community, and may be willing to provide some services. But it may now be appropriate, indeed necessary, for the Project to help foster area or user-group organisations, particularly in connection with water supply.

In interviews, some Activistas and officials such as the Municipal Vice-Governor felt that the development of such organisations could be both useful and feasible. The 'Law of Free Associations' offers a supportive legal environment. The old resident committees offer a precedent while their still active and enthusiastic representatives (some of whom are Activistas), offer an existing presence on which to build.

Organization-building is, of course a complex and risk-ridden undertaking. It is especially difficult when, as is the case, refugee influx means changing population patterns and there is little history of local initiative. If this approach is to be taken, it needs to be fully discussed, well thought out, and incrementally implemented, first at a modest scale.

The maintenance of standpipes is an issue which needs to be addressed in this way. Once established, area-based organisations can be effective in several other activities such as waste disposal, tree planting and maintenance, maintenance of public latrines and hygiene around the local neighbourhood market.

Privatization

For some tasks such as operating water standpipes or market latrines, privatization could complement community organisations. The responsibility for operating such services could be "franchised" out to individuals who would run the operation for profit gained from user fees. Even so, it would be necessary to develop guidelines for the private vendors, and the means to enforce them, so that for example maximum access to these services (a major objective of the Project), can be maintained, especially for the poor, while offering a fair income to the vendors. Privatization is not, however, a substitute for community organisations that represent the interests and accountability, rights and responsibilities of areas and users. The agreement of such organisations may be necessary to make privatization acceptable, and to make private vendors accountable.

Efficiency, Productivity, and Financial Planning

In a resource-scarce environment such as Angola, sustainability and replicability rely on the efficient, productive and effective use of resources. The Project has seen one of its "plus-points" as the effective use of local resources and small amounts of imported resources: it needs to examine whether it is using its resources efficiently, productively and effectively, and whether it can serve as a model for local organisations. A corollary is the need for improved financial planning and budgeting, using a simple costing and financial cost-benefit analysis. Analysis of affordability is also required to assess ability and willingness to pay, given the meagre resources of households and other demands on these resources.

Very little of such analysis has so far been done. Despite the volatile financial environment, it appears possible. The simple financial analyses done here suggest this, even if assumptions and numbers used need to be cross-checked (see Table 6 to 25). It suggests a methodology (e.g. how to examine the financial viability of key activities such as water standpipes, market latrines, and latrine-slab production), it reveals issues needing

attention (e.g. the apparently high transport costs of materials and labour, which impact negatively on cost-effectiveness, affordability, and commercial viability), and it reveals points of promise (e.g. the high quantifiable benefits of standpipes and the potential for cost-recovery).

There was no time to examine the possibility of doing affordability analyses: Table 25 suggests a format to do so. The Project already has a member whose studies at household level could be directed to include this.

Local Planning and Management Capacity

It is necessary to increase the capacity of local organisations to systematically plan, implement, manage, maintain, and evaluate programmes and projects, if such organisations are to assume increasing responsibility for such endeavours. They need to routinely address basic questions such as:-

* What are the needs and how do we assess priorities, for whom?
* How much of what resources are required and from where?
* How do we plan for, implement, and maintain the services and enterprises that meet these needs?
* How can we learn from an existing experience to be more effective in the future?

Currently, the Project is seen as providing the answers and the resources. The need to plan, to look for resources beyond the Project, and to use resources efficiently is less well appreciated, even among Project members. In addition to formal training, the Project could foster this capacity through having a modest budget for providing partial financing to local organisations for small projects; approval would require simple, well thought out project plans, including matched community resources and plans demonstrating sustainability.

Technology

Technological sustainability and replicability is also important; it is important, for example, to know the extent to which water can be supplied to the standpipes being constructed. During the assessment EPAL did not supply water even on the limited number of days agreed. Standpipes should be built such that vulnerable parts are more durable, and a local resident-user should be trained to repair and maintain standpipes without needing expensive technical back-up from the Project. Planning for second pits for latrines is required, and for the future emptying of the pits.

Project Personnel Capacities

All the above implies increased demands on the time and skills of a limited number of personnel. Personnel, especially senior management, are already over-stretched. A number of measures is possible.

First, priority has to be given to those initiatives that

consolidate and improve on existing activities (such as community-based organisations and financial planning) rather than new initiatives that expand the Projects activities, either sectorally or geographically.

Second, the senior management should minimise involvement in those activities that could be done by others. This is especially important for expatriate staff whose time costs the Project much more than Angolan staff. Job descriptions need to be clear and comprehensive, appropriate to the designated staff person. Each staff must carry out their designated tasks. Examples of observed questionable practices included:-

* simple technical repairs done by the expatriate staff, when for purposes of both training and efficient resource use, the Angolan staff could have done the repair;
* control of access to inventory and stock by an expatriate staff when for purposes of both quicker access and efficient resource-use, a more often present Angolan staff member might be made responsible.

The suggestions on helping develop community-based organisations and on improving financial planning require personnel with those specific skills and interests. These skills and interests need to be enhanced in the executing organisation, through:-
* doing less of other tasks so more of these tasks could be done;
* upgrading skill through self-learning and training;
* short-term consultants helping do these tasks and transfer these skills;
* hiring personnel.

The above is an opportunity to involve more Angolans at the senior management and professional level. It appears that other NGOs such as ADRA attract professional Angolans. Project Sambizanga could do the same by seeking Angolans as partners (individually and as members of other organisations), and in collaborating closely with other organisations that have such personnel.

Regarding financial planning, an Angolan is to replace a departing expatriate as the accountant/bookkeeper. This though may represent a net loss in financial skills given that now there is one staff dedicated to finance in place of two, and his skills and job-description in will need upgrading to address the financial planning and analysis. Consideration could also be given to upgrading the financial skills of the person working on small-enterprises if more financial analysis was required.

Potential for a Small Enterprise Sector

The Project could consider developing its small-enterprise related activities into a more visible sector. For a poor community, income-generation is an absolute basic need. Several Project activities are already potentially income-generating small- enterprises (e.g. latrine slab and concrete block production, latrines in markets). The objective is to make these

financially viable and turn them over to local organisations and entrepreneurs. (One NGO has already been assisted with a market latrine which charges user fees). These projects could be linked as a small-enterprise programme package suitable for attracting funds. An important aspect is that women are most concerned with the health of the household, and women are now important income-earners for the household.

This suggestion should be taken up only if the Project feels it still has capacity once the earlier suggestions are implemented. Consequently, this should consolidate the core Project rather than develop new dimensions. In either case, a rigorous approach should be taken with the existing potential small-enterprise projects: testing them carefully for sustainability (organizational, financial, and technological) before offering them as "solutions" to the local community.

Making Known, Discussing, and Acting on all the above.

Finally, not least, a visible procedure needs to be set up to make known the findings of this assessment, and to discuss and respond to it. If the impressive achievements of Project Sambizanga are to be useful beyond the Project's life, those involved in the Project need to discuss and respond to the suggestions in the report, and consider how they intend to follow them up.

PROJECT SAMBIZANGA:
INTERIM REVIEW AND ASSESSMENT

REPORT

1 INTRODUCTION

The "Musseques" of Luanda are unplanned urban settlements with few services. The population of the musseques has grown rapidly since independence of Angola in 1975 as rural people have fled to the city from the war in rural areas. People build their own houses in the shanty-towns which in 1994 house approximately 2,000,000 people. Some of the neighbourhoods remain permanently inundated following periods of flooding. There are a few standpipes providing drinking water but not enough to meet needs. There are inadequate sanitation facilities. Rubbish collection is unreliable.

Development Workshop began activities in the Municipality of Sambizanga, a part of the musseques, in 1987/8. Surveys on health and sanitation were carried out, and joint planning initiated with the community and government departments leading to a number of activities. A health centre was improved, and this and the community development team were the basis for a very successful immunisation programme, and a health education programme. A workshop was constructed to provide materials for sanitation improvements (drainage channel section, latrine slabs, water standpipes) and training to local artisans.

The project aimed to assist the community to define its needs and priorities, to assist them in working in conjunction with the government services, to develop participation and popular planning of the upgrading of the musseques and to provide materials and training to local people for upgrading work.

Although by 1992, when it was necessary to seek further funding, progress had been slower than planned, it was decided to develop a further phase of the project. Political change had been rapid in the period 1990-92 leading to greater community activity and an apparent greater willingness by government services to work with local communities. The new phase of the project began in 1992 to run until 1995.

It was decided to carry out an interim review and assessment of Project Sambizanga during May 1994.

1.1 Terms of Reference

The Terms of Reference were to assess the progress of the Project, the extent to which its objectives had been achieved, while also considering the appropriateness of the objectives, the Project design, the Project structure, the procedures, and the changing conditions in Angola. Recommendations were to be made so that:-

a) modifications could be made to the basic strategy for the final part of the project (1994-5) (either to adapt better to changed circumstances or to correct problems)
b) points of reference could be developed which would be of use in planning strategy for beyond 1995.

It was agreed that a review was required at this point because:-

a) the strategy had been based on various assumptions which would require testing
b) change in Angola has been rapid and unpredictable, whilst modifications have been made which require articulating and evaluating; flexibility had been built into the project which helped it to cope with change but an assessment could ensure that this had been kept within reasonable limits
c) new experiences were being gained and new opportunities presenting themselves
d) the wider implications of lessons learnt now required exploring, models may now be emerging which require articulating and evaluating
e) the relationship in the future with the pilot area, with new areas, with previous partners and with new partners needs to be considered.

The fact that various actions may be required at this stage does not imply a criticism, but it is likely that the proper time has come for them to be addressed.

It was agreed that particular areas of uncertainty which should be looked at were:-

a) the concept of the activista, its replicability and sustainability (voluntary work)
b) the emerging role of spin-off projects, and their relationship with DW, how far DW should get into new activities
c) inputs, real costs (including food-for-work), the efficiency of their use, their measurement and possible recovery in the context of Luanda, and implications for sustainability and replication (voluntary work)
d) what can continue after 1995 and how, how to disengage in a positive manner from the particular community
e) how can investments be maintained and their utility maximised
f) how satisfied are partners (including the community)
g) adequacy and replicability of the technologies used.

1.2 Assessment Team and Method

The assessment team was expected to combine good knowledge of the Project using different perspectives, technical expertise on subject matter, and objectivity for an honest assessment. The assessment team consisted of Dr. Vita Vemba, Dr. Farokh Afshar, and Mr. Paul Robson. Dr. Vemba, an Angolan medical doctor and Luanda Provincial Director of Public Health in the Ministry of Health, contributed to the evaluation a technical expertise in health, an Angolan perspective, and a unique viewpoint as a member of one of the major local partners. Dr. Afshar, a professor at the University of Guelph, Canada, with a Ph.D in Urban and Regional Planning and founding director of DW, combined a research and academic view with professional experience as well as an intimate knowledge of DW, the executing agency. Paul Robson, a Programme Officer for One World Action, a major donor of the Project with many years of experience in southern Africa and a strong interest in community development, brought the donor's perspective along with an extensive knowledge of the region and of Angola in particular. Dr. Vemba and Mr. Robson also spoke Portuguese.

Full cooperation was received from those working of Project Sambizanga, who actively participated in the assessment, while those assessment team had full freedom to carry out the assessment as they wished. Both quantitative and qualitative methods were adopted. For example, quantitative targets were compared with number of outputs achieved. Similarly, costing and financial analyses were done of various project components. In parallel, extensive interviews were conducted with project members and stakeholders, taking special note of divergent views. Most project activities were conscientiously observed. Key documents were carefully scrutinised.

In retrospect, the perspective of the beneficiary community could have been enhanced if more discussions had been held with this group. The discussions that did take place, combined with those held with the Activistas (who are members of the user-community) ensured, however, that the community perspective was represented.

The assessment team was briefed by the DW technical team on 29th and 30th April 1994, in group workshops and individual meetings. The team met between May 1st and May 12th and the Project Field Coordinator, the staff of the Cacuaco Workshop, the activistas of Ngola Kiluange, the staff of the health post, some residents and teachers of Ngola Kiluange, and representatives of local NGOs, EPAL and the Municipal Government.

2 PROJECT OBJECTIVES AND STRATEGY

This section will review the overall objectives, strategy and organisation of Project Sambizanga. It will begin by restating the objectives and strategy as presented in the original project proposal. It will then examine the strengths and weaknesses of the objectives and strategy, and will point out the need for a clearer statement. An attempt will be made to restate the objectives.

2.1 Project Objectives as originally stated

The project's objectives are stated as follows (DW 1992a:12-15):-

2.1.1 Developmental Objectives

1) Improve the quality of community services in the project area and extend access to a greater number of people.

2) Develop a community-based model for interventions aimed at improving public health conditions in the musseques.

3) Develop the NGO partners' training and implementation capacity to assist community groups (CBOs) in urban upgrading.

2.1.2 Intermediate Objectives

1) Develop the capacity of the community to understand health and environmental issues in relation to their daily lives in order that they press for useful and appropriate change.

2) Support the public service bodies in local interventions designed to improve living conditions and health (specifically health service, ELISAL and EPAL).

2.1.3 Immediate Objectives

The Immediate Objectives are the immediate steps to be taken towards fulfilling the longer-term Intermediate and Developmental Objectives.

Immediate objectives are components of the Project. These are summarised below.

2.1.3.1 Training

The training component aims to develop and implement a training programme for community development workers, members of community organisations, other members of the local community, government health staff, and the Project's local staff. Training is executed in such skills as office practice and planning techniques, innovative water and sanitation techniques, and basic preventive health care.

The overall short-term objective of the training component is to motivate Project staff and develop selected community members as links between the Project and the community. In the longer-term, the overall objective is to prepare the community and local government to "continue self-sufficient community development" especially in water, sanitation, and health, and to develop employable skills as individuals (DW 1992:12-13).

2.1.3.2 Sanitation, Water, and Upgrading of Physical Infrastructure

The upgrading component plans to establish a community-based monitoring of chlorine content of water, purchased from vendors, repair and improve 15 existing standpipes in Ngola Kiluange, extend the water supply network to 30 additional standpipes in Val Saroca, provide water for one health centre and two health posts, develop a linked strategy between community and government for filling in stagnant water pools and for solid waste removal, promote the use of dry pit latrines, and consolidate the capacity of the Cacuaco Workshop to provide tools, materials, and training to the community in support of the above initiatives.

2.1.3.3 Community Development

The community development component aims to "promote the self-sufficiency of local CBOs", establish a Community Project Committee for local control of infrastructure improvements, develop a model for community management of water and rubbish disposal, develop a health-education programme for community workers, ensure adequate technical support for the Project Field Coordinator and community workers, and help develop communication channels between the community and service providers to foster government accountability and community participation.

2.2 Assessment of Objectives and Strategy (Figure 3 and Table 4)

Briefly stated, the Project consists of an executing agency (DW) with both expatriate and Angolan members working closely with community members and local organisations in the fields of training, physical upgrading, and community development. Training is provided through both informal, on-the-job activities and more formal courses in specific subjects. Physical upgrading includes water supply, latrines, and solid waste disposal. Community development involves strengthening the capacity and resource base of local organisations as well as community technological development. The Project is funded by bilateral and multilateral international aid agencies with the executing agency receiving the funds through intermediaries such as UNICEF and One World Action (Table 1). The Project's Organisational structure includes both the Project Management Committee and a Community Project Committee consisting of representatives of local NGO, CBO, government, and business groups (DW 1992a, see Figure 9). Procedures for planning, implementation, and maintenance of the Project involve regular participatory group meetings, mostly held in the community itself (Table 4).

In discussing the objectives of Project Sambizanga in the meetings at the beginning of the Review, the following points were made:-

a) in practice the objective of improving capacity of government partners is important although it is not stressed in the written objectives
b) the objectives also guide DW's interventions in Angola as a whole, and spin-off projects have usually taken these objectives, or a sub-set, and applied them to a wider area
c) possibly the objective of improving community services has a slightly higher place in the hierarchy of objectives, the other two being part a strategy leading to that objective
d) in practice community services has meant water, sanitation, community health because of:-
   - the skills of DW
   - water being a felt and absolute need with household economic impact
   - sanitation an emerging felt need and an absolute need
   - curative health a felt need, preventive health and absolute need
   - studies have shown that in Luanda intervention in these areas has the highest potential impact on well-being.

2.2.1 Strengths

A major strength of the objectives and design of the Project is its foundation on:-

a) the felt and absolute needs of the community, and
b) the emerging local organisational structures (Plates 1, 2 and 3).

These are perceived as the groundwork for on-going sustainable and replicable community development. Another major strength lies in the strong links between the physical and social aspects of the project: between the construction of standpipes, latrines, etc., the health impacts of such interventions, and community development.

Development Workshop, the executing agency, has made contacts in the musseques of Luanda for more than 10 years, and has worked in the area of Project Sambizanga for 7 years. Preparatory Needs' Assessment surveys helped DW to discover the strongly expressed need of the community for water and the less articulated, but clear, need for latrines and other public health improvements which could significantly reduce the high morbidity and mortality rates in Luanda's musseques. DW's years of work in the community also helped it to identify and work with community members and local organisations that increasingly have to take over responsibility for local development. Both objectives and design evolved incrementally from the concrete conditions of the community. Project Sambizanga works mainly with the Provincial (City) level of State structures which provide the best opportunity for working cooperation (the Ministry level is mainly concerned with policy matters not implementation).

Consequently, Project objectives and design are well justified in their approach to start with the essential community services of water, sanitation and health, and to develop the capacities of community members and organisations through their involvement in both the realizations of such felt needs as well as in more formal training. The emphasis on the community and local organisations as partners and part of the Project, is operationalized through such procedures as the regular Saturday Public Meeting, the monthly Water Committee Meeting, and the 6-monthly Consultative Committee Meeting (Table 4).

DW has managed to have an impact, not due to size but due to efficiency in transforming resources for particular objectives. DW is able to allow local partners to use international aid resources to best effect. DW has flexibility in seeking funds, and has good knowledge of local entry points such as State bodies and local NGOs. DW is able to choose its funders, and this has allowed it to choose longer term programmes even when many funders have only emergency, short term funds. DW is seen as not threatening local structures (which unfortunately is the impression locally of some international NGOs). DW is seen as having committed itself to Angola, and being prepared to work with certain government structures when appropriate.

A document produced by Habitat about the musseques of Luanda criticised the Cuban structure plan for the city (and other similar documents) for dealing in grand concepts in a situation where there is no implementation capacity. It states that it is more useful to think in terms of small experiments, a gradual building of capacity, learning from experience. The strength of Project Sambizanga is that it has built local capacity and learnt from experience. It has potential usefulness beyond its immediate boundaries if the experience can be disseminated.

Budget figures analysed suggest an appropriate distribution of funds among components. Aggregate figures suggest a not uncommon bias towards physical components with the Community Development component receiving only 20 percent of total funding (Table 1). More detailed analysis, however, reveals greater parity as reflected in the distribution of funds between construction and training (Table 3). The NGO Administration overhead at 8.6 percent is well below the usual 15 administration costs of Canadian NGOs.

2.2.2 Issues and Opportunities.

2.2.2.1 Need for Clearer Statement of Objectives and Strategy

The objectives and design of Project Sambizanga could be more precisely and clearly articulated, more widely agreed upon, and more closely linked. These improvements would help in Project operation and would also further the second objective of the Project: to "develop a model" for local partners.

Developmental objectives: It is unclear as to whether all the three listed objectives were intended to have equal weight and, if not, which is the primary objective of the Project. This lack of clarity is indicated by the conflicting statements in the Project documents and of the Project staff. It is unclear whether the primary objective is to "improve public health conditions" (objective 2 above, and as stated by one Project member), or whether it is community development defined as "to enhance community capacity to identify and address its own problems" (as expressed by another Project member). It is unclear if community development is a strategy rather than an end objective with health and physical improvements having an equal and related importance (as expressed by a third Project member and suggested by a return to the term "urban upgrading" in the third developmental objective)?

A possible ambiguity regarding the role and definition of community development especially vis-a-vis physical upgrading is reflected in the Cacuaco Workshop being included under "Physical" in the "Immediate Objectives" part of the Project Proposal (DW 1992a:14), but under "Community development" in the "Activities - Strategy" part of the same document.

There is a similar ambiguity in the relative emphasis given to NGOs, CBOs and government agencies. The stated primary Developmental Objectives suggest NGOs as a main focus who will, in turn, assist CBOs in Developmental Objective (1.c. above). "Public-service bodies" are somewhat less important as Intermediate Objectives. In interviews and discussions however, Project members appeared not to distinguish between NGOs and CBOs, and there seems to be a slight confusion between the two ideas. In practice, government agencies appeared to play an important role as local counterparts, as did both NGOs and CBOs.

Ambiguity in early phases of a Project often permits flexibility and responsiveness to changing conditions and new discoveries. Statements of objectives can function as "first working hypotheses". To date, Project Sambizanga has been able to respond to different initiatives and attract different donors, groups and individuals each of whom could interpret the project in their own way. Ambiguity in the objectives may have facilitated the considerable and real achievements of the project.

At later stages in a Project, greater clarity is more appropriate. Wider experience can then be drawn upon to clearly articulate the conceptual and operational model underlying the Project. Developing a more explicit model at this later stage is necessary because the Project is being tested for sustainability and replicability. (Sustainability, replicability and model-building were stressed as key objectives by Project members in the briefing to the Assessment team). Also at this stage local organisations are looking for a clear model to follow, albeit with modifications, in order to take over some of the roles played by the executing agency.

Clarity is needed in terms of:-
a) what are the primary and what are the secondary objectives;
b) why a particular strategy has been chosen
c) what guidelines can be passed on to others.

To make the Project model clearer requires a process of consultative discussion, experiential research, and writing among Project members and others on whom they can call. A basic step towards this re-articulation is a more precise reformulation of Project objectives. For illustrative purposes only, an example of such a possible formulation is presented below.

2.2.2.2 Restatement of objectives

Development Objectives:

Project Sambizanga emerges from the felt and absolute needs of the community. These needs link the physical and social components of Community Development. These are improved Water and Waste disposal (physical), and improved Health (social).

The Project's primary objective is Community Development defined as the enhancement of the community's ability to identify and address/meet its own needs through both NGO/CBO and local government organisations. The Project's primary instruments to achieve this objective is to foster knowledge and skills on replicable and sustainable community development in local organisations through their involvement in Project activities and through more formal training.

An example of a consistent statement of the Project's primary Developmental Objectives is as follows:

1) To improve the quality and quantity of community services, physical and social (primarily health-related) in the project area and extend access to a greater number of people.

2) To enhance the capacities of local organisations - both NGO/CBO and local government - to identify and address local needs sustainably and replicably, especially those related to community services.

3) To develop and implement with the local organisations a sustainable and replicable model for improving community services that these organisations can adopt.

Such a statement of purpose and objectives clearly identifies the primary objective as sustainable and replicable community development, which is more precisely defined as the enhancement of the community's ability to identify and address/meet its own needs (especially physical and health related). It also defines the major instruments of both developing and implementing the model, these being experiential learning by improving community services with local organisations as well as by training. It removes the ambiguity and tension between the relative importance of physical and social, NGO/CBO and local government by giving them equal importance. The sequencing of the objectives suggests the process followed - roughly from (1) through (3), and the relative importance of the objectives: the most important being objective (3) that ensures ongoing community development beyond the Project's life.

In terms of the organisational structure of the Project, moving community development up to encompass both physical and social improvements means that what were originally stated as the "technical" and "community development" aspects of the Project can be restated as "physical" and "social" development. This gives everyone in the Project an equal stake in community development rather than relegating some to only "technical back-stopping" (Figure 4).

Intermediate and immediate objectives: Given the above reformulation of the Developmental Objectives, the Intermediate Objectives may no longer be necessary. Promoting community understanding of health and environmental issues can be included in the public health education sections of both community services and training. Similarly, support for public service bodies is part of Developmental objective (2): "enhancing the capacity of local organisations". Under Immediate Objectives, direct action on health related issues may need more visibility such as improved community health, health education, etc., to balance with the identified objective of improved sanitation, water and physical upgrading.

To sum up: the above is offered as an illustration of how to begin to more clearly articulate the Project's model which is, as yet, unclear.

3 IMMEDIATE OBJECTIVES AND STRATEGIES; ACHIEVEMENTS, ISSUES AND OPPORTUNITIES

This section will review and assess the project components of:-
a) training
b) water supply
c) latrines
d) solid waste removal
e) Cacuaco Workshop
f) Community Development
g) Women's Small Enterprise Development
h) Health

For each component of the Project:-
i) the objectives (as earlier summarized) will be recapitulated along with the stated strategies to achieve these objectives
ii) an assessment will be made of what has been achieved
iii) issues will be noted and suggestions made of opportunities for change.

3.1 Training

3.1.1 Objectives and Strategies

Objectives: The objective of the training component is to develop and implement a training program for community development workers, members of community organisations, other members of the local community, government health staff, and the Project's local staff. Training is executed in such skills as office practice and planning techniques, innovative water and sanitation techniques, and basic preventive health care.

The overall short-term objective of the training component is to motivate Project staff and develop community members as links between the Project and the community. In the longer-term, the overall objective is to prepare the community and local government to "continue self-sufficient community development" especially in water, sanitation, and health, and to develop employable skills as individuals (DW 1992:12-13).

Strategies: Strategies include:-

(1) teaching methods based on problem-solving and trainee participation;
(2) on-the-job training in terms of "enabling people to do something they want/need to know how to do, accompanying them during an intervention, and reviewing the act and the results";
(3) more formal training in the four modules of Water and Sanitation, Primary Health Care, Communications, Organization, and Management, Civic and Community Action;
(4) continuing education for health personnel concentrating on mother and child care and immunisation (DW 1992:16-17).

The public health lectures given by Activistas in the Health Centre were observed. A Project staff member returning from training on accountancy in South Africa, presented his experience. Interviews were conducted with Project staff who have served as trainers. Documents were analyzed. Timing did not permit an observation of training in progress or a review of teaching materials.

3.1.2 Achievements

An impressive range of educational activity including training has been undertaken, which is important in a country where skills are still in very short supply. Examples include lectures in primary health by Activistas to schools and to patients attending the Health Centre (Plate 2), formal courses by Project professionals and government officials on the modules mentioned above, and sponsorship of Project staff training in such subjects as accounting in training centres outside the country.

One indication of the scope and intensity of the training program is the 1993 Training Progress Chart for Apprentices in Cacuaco Workshop (DW 1993b:21). During that year thirteen apprentices were involved in 13 technical training courses in such topics as latrine slab manufacture, roof construction, and basic carpentry. An expression of the creativity of the programme is the talks on public health issues given to patients while they wait to be treated in the Health Centre: a "captive audience" is receptive to messages of preventive health care as they experience the consequences of not having earlier adequately concerned themselves with it (Plate 2). In addition, an expression of the effectiveness of the training are the two Activista women trained in constructing latrines who now apparently help others construct them in houses.

3.1.3 Issues and Opportunities

3.1.3.1 Technical Training for Apprentices

While it appears much training has been done, we did not observe and could directly assess the quality and results of this training. One indicator is the evaluation conducted by the Project on the technical training cited above (Table 5). An analysis comparing the number of observers, those trained, and those who "know well and can act independently" as a result of the training reveals that out of 169 training experiences (13 participants attended 13 courses), 47 were observing the training, 97 were being actually trained, and only 25 could actually practice independently what they had been trained in. The result could be interpreted as a success rate of 15% (or 26% of those trained). On the other hand, the seriousness with which the training component is treated is reflected in the fact that a progress chart was compiled and a candid evaluation done on the results.

3.1.3.2 Course in Programme/Project Planning, Implementation and Evaluation

Given the overall objective to make the community and local government more self-sufficient in community development and to develop replicable and sustainable models through the Project, there is a need to train NGOs, CBOs, local-government officials, and Project members in the above topic. Such a course would likely fit within the module on "Communication, Organization, Management".

The need for such training was acknowledged by Project staff for both local organisations and for Project members. To quote one senior staff: "Local organisations emphasize the lack of resources and do not adequately consider using existing resources more efficiently and productively". Another senior staff attributed several Project problems to inadequate consideration of issues of efficiency and productivity. Our own attempts to involve Project members in some basic financial analysis of Project components (presented later), suggests the need for developing such thinking, knowledge, and skills among Project members and local organisations. Activistas showed initiative in embarking on projects (e.g. tree-planting, latrines in markets). The effectiveness and sustainability of these initiatives could be enhanced with training in basic planning and management.

A course on Programme/Project Planning, Implementation, and Evaluation could include the following:-

How to plan, appraise, implement, manage, and evaluate programmes/projects. This includes thinking-through and writing a simple project proposal including technical and financial feasibility, work-plan for project implementation and management, and an evaluation system. The course will teach participants how to identify sources of support for resourcing the project, and methods for effectively persuading these sources to provide the required support.

An important component of the course will be a simple resource/ financial analysis identifying required inputs, their specifications, quantities, and costs leading to assessments of production and output costs. Where projects have assessable, qualitative, and quantifiable benefits (expressible in money) such as income-generating projects, the course will include the ability to do a simple cost-benefit or receipts, expenditures and income, or profitability analysis (** Spreadsheet tables illustrate such simple analyses and their utility).

3.2 Water Supply

3.2.1 Objectives and Strategies

Objectives: The objectives of this component are to establish a community-monitoring of chlorine content of water bought from vendors, repair and improve 15 existing standpipes in Ngola Kiluange, extend the water network to 30 additional standpipes in Val Saroca, and provide water for one health centre and two health posts (DW 1992:13-14).

Strategies: Specific strategies include studies on technical feasibility, meetings with the community establishing acceptability (1990), technical and implementation planning (1991), voluntary labour for digging trenches, examining potential for, and possibly instituting cost-recovery through user fees.

The musseques have very little piped water. Most domestic water is purchased from commercial vendors who charge high prices for river water, often untreated, brought in by tanker-lorry (Plates 4 and 5).

Several Project standpipes, those completed and those under construction, were visited (Plate 7). The Technical team was observed doing repair and maintenance work in the standpipes. The Technical team and Activistas responsible for water were interviewed.

3.2.2 Achievements

Quantitatively, relative to intended outputs, much has been achieved. The Project planned to construct fifteen standpipes in Ngola Kiluange. The Project reports that twenty-one stand-posts were actually built. In addition, a planned reservoir has been constructed (as well as an unanticipated pump-station made necessary by the overall drop in water pressure in the city) in preparation for the new network of thirty standpipes in Val Saroca (Plates 6 and 7, Table 12 and Figures 4, 5 and 6).

With designs completed and a consultant currently in the field helping the Project to examine the organisational and financial (especially cost-recovery) of the Val Saroca phase, ** that part of the work could also soon commence.

Technologically, the standpipes appear appropriately simple in design, although there are some issues which will be discussed later. Organisationally, the Project seems to be moving in the right direction. An Angolan water technician is now working closely with the expatriate technician who will increasingly be passing more responsibility on to the Angolan. A Water Committee has been formed consisting of the two water technicians and three Activistas assigned to the water project. For each completed standpipe, a nearby resident has been assigned as a "water-monitor" responsible for operations and maintenance. A system for monitoring, reporting, and rectifying operation and

maintenance problems has been established. This includes a simple checklist of possible problems for the monitor to use (DW 1993b:15) and regular meetings of the Water Committee. The committee meets weekly, with the water-monitors joining this meeting once a month. However, there are issues here too, to be later discussed (Table 4).

The simplicity of the standpipe design reduces construction cost. The existing high cost of commercially-trucked and often untreated river water suggests that the community may be willing to pay towards an alternative and cheaper supply. Preliminary financial analysis monetising costs and benefits (detailed below), suggests high costs per standpipes with transport of material and labour being a major factor. However, given the even higher costs of the alternative - commercially-trucked water - each standpipe offers substantial net benefits to users, even assuming user fees that fully recover both construction and maintenance costs.

Community-based monitoring of the chlorine content of water has been established through activistas, and appears to have raised awareness of the need for treating and covering water.

It is planned to make containers available for household storage of drinking water (improving the storage of the small amount of water which is drunk), and this is expected to happen later in 1994.

The water systems have not yet been improved in the Health Centre and the two health posts.

3.2.3 Issues and Opportunities

3.2.3.1 Need for Clarity in Specifications

The specifications regarding the depth at which the pipes are to be buried appear unclear and not consistently implemented. The Project director stipulates a minimum of one metre to reduce chances of illegal connections. The community, or at least those members who were observed digging the trench appeared reluctant to go to this depth. The water technicians suggested a 0.5 metre depth as adequate. There seems to be as yet no evidence as to whether illegal connections are discouraged by the depth of pipe. Drawings used by the technicians did not have this specification on them.

3.2.3.2 Improving the Repair and Maintenance System

The three standpipes visited were all in need of some maintenance. The water technicians were replacing the taps in one, another required some re-plastering on top of the basin walls and on the concrete-cover for the shut-off valve. All three needed cleaning, especially around the drain. None of the residents knew who the monitor was and, on questioning, did not appear to take any responsibility for the standpipes. The problem may have been exacerbated by the city not having supplied these pipes with water for the last few designated days.

A more publicly visible and more community participatory process for developing a repair and maintenance system may be necessary. Currently, it appears the monitors are selected directly and as individuals by the Project. There is no mechanism to make the users aware of the monitor and his/her responsibilities and rights. Nor is there a mechanism for making the users feel more responsible for the standpipe. A greater participatory process for designing and implementing a repair and maintenance system could make both community and monitor more mutually accountable, and establish the rights and responsibilities of Project Sambizanga, the activistas, the monitors and each individual user. Steps should be taken on this before building the standpipes in Val Saroca, so that a better model is available when beginning in the latter area.

Alternatively, the standpipes could be privatised: an individual could be made responsible for one or more standpipes in return for the right to charge user fees. In this case too, a community participatory process for developing the system could be necessary to make it understood and acceptable to the users and to local government. There will likely be resistance to paying a private individual for government-supplied water. In addition, guidelines regarding who should run the operation would need to be agreed on to ensure both fair profits for the operator and affordable access to water for the community's poorer members.

3.2.3.3 Potential Lessons from Other Operating Standpipes

It may be useful to examine some of the non-Project standpipes that are supplied with water. The standpipe served by the refinery, for example, appears well maintained with an orderly system for distributing water. Is there a community-based, spontaneous system for operating and maintaining this standpipe and, if so, what can the Project learn from it? Also technologically, is there something in the way the standpipe is constructed and in the choice of fittings (say, the tap) that ensures greater durability and lower maintenance? Or is it simply a highly wasteful open-flow system? How is repair and maintenance organized, if at all?

3.2.3.4 Need for Costing and Financial Analysis

Costing of the water system as a whole and per standpipe needs to be done urgently. Knowledge of the real costs is essential for a number of reasons. These include being able to assess:-
(1) how affordable the system is, regardless of who pays for it;
(2) what the coverage can be in terms of number of standpipes, given a certain budget;
(3) how cost-effective it is relative to other systems such as the commercial trucked-water system;
(4) what the charges will need to be in order to recover costs or what amount of subsidy will be required.

Knowledge of costs and how they distribute among various inputs also serves as a planning and management tool: for example, knowing costs fosters financial responsibility and discipline at all levels, from managers down to workers and users of the system. Knowing the relative costs of different inputs also helps identify means of reducing costs. The community can be made more responsible towards maintenance and more receptive to user fees if they know what the system and its components cost and by comparing costs to potential benefits - for example, savings accruing them for every litre of water they obtain from the standpipe rather than from the commercial vendors.

Given the crisis in the Angolan economy, the rapidly declining value of the Angolan Kwanza, and the constantly changing relations between wages, costs and prices, costings can become out-of-date very quickly. However, by setting up a system that can be quickly updated and that gives (more stable) dollar equivalents, such problems can be alleviated if not completely resolved.

Project costing in the earlier phases of the Project may have been difficult and even premature. Costing can and should be done, however, in this later phase with its experience of 21 standpipes already constructed, and with questions of both organisational and financial replicability and sustainability becoming more urgent.

As part of this assessment, a simple methodology for **financial cost-benefit analysis** was developed. Such an analysis was also carried out on several of the Project components including the standpipes (see Appendix 1 for a description of the method, and later sections for financial analyses). The methodology, analysis, and findings presented here are preliminary since all of these, their assumptions and especially quantities and costs, need to be further checked for accuracy. They do however, offer a basis from which to develop this very important and previously neglected aspect of the Project.

Preliminary findings of financial analysis: For the standpipes, three spreadsheet-based models were developed as a basis for analysis:-
(1) a construction costs and benefits model;
(2) a maintenance patterns and costs model;
(3), a construction and maintenance costs and benefits model
(See Tables 15, 16 and 17).

Even though the models are preliminary and tentative, the findings are revealing. The cost per standpipe is approximately US$1000 with Materials, Labour and Transport accounting for about 33 percent each of total costs (Table 15). Transport costs are unusually high for this type of construction because of the high costs of keeping vehicles on the road (Tables 7 to 10). Less surprising, the expatriate technicians costs also comprise a large proportion of the total labour costs (Table 15). Both these findings suggest the need for decentralising construction and maintenance to Angolan staff and to the community, with the latter measure for example, greatly reducing the cost of transporting Project staff to standpipes for regular maintenance.

Despite high costs, benefits are substantially higher. Benefits have been calculated as the amount of water supplied per standpipe, monetised using their commercial price. If the price charged by commercial vendors for purchases of small per bucket quantities of water is used (NKZ 1000/litre, which is the price the majority of the poor pay), net benefits per litre are more than double the total construction and maintenance costs (Table 17). That is, even assuming users pay for all the construction and maintenance, per litre costs would be half (NKZ 500) what they are now paying to commercial vendors. In other words, each litre of water that people purchase from the standpipe rather than the commercial vendor saves them NKZ 500 which they can use for other essential needs or for purchasing more water. If it is assumed that only maintenance costs are to be covered, and these costs are reduced by having a part-time attendant, users need pay only NKZ 200. This is less than the bulk rates charged by vendors for filling large tanks (Table 18).

The main findings, if borne out after the assumptions are cross-checked, does suggest that the standpipes are highly beneficial and affordable even to the poorer groups, and even if full cost-recovery were required. These groups are currently paying twice as much for untreated water to commercial vendors.

3.3 Latrines

3.3.1 Objectives and Strategies

Objectives: The objectives of this component is to promote the use of dry pit latrines. (DW 1992:13-14).
Strategies: The strategy is the disseminating of the concept of dry latrines to the community through the community development component, making available a limited number of latrine slabs and pit liners for demonstration, training community members in latrine slab and pit-liner manufacture and latrine construction (though construction is not mentioned in the Project Proposal document, DW, 1992).

The majority of houses and public facilities (schools, health centres, etc.) in the musseques have no latrines or have pour-flush models that in most cases have filled up and are no longer usable. The city does not have the resources to empty pour-flush latrines. Consequently, there are very few operating latrines in the musseques, and most human-waste is believed to being deposited on the surface, probably adding to the dangers of cholera and other diarrhoeal diseases.

3.3.2 Achievements

The Project's latrine programme aims to popularise the use of dry pit latrines (Plate 8 and Figure 7). The design seems to have been accepted, and fear of sitting over the pit overcome. The latrine can apparently be built in a weekend, which is a manageable time for a household.

The advantages of a dry-pit latrine seem to have been accepted:- they are cheaper to make and built than pour-flush latrines (they can be smaller, use fewer materials and not require reinforcing rods), the design from Mozambique seems to have worked well in practice and be much better than the improvised dry-pit latrines used by some families. Dry-pit latrines take a longer time to fill up than the pour-flush models and can be left to dry out before being more easily emptied by the household or by hired help.

The programme consists of the development of an improved single dry pit latrine, a latrine slab Production Unit at the Cacuaco Workshop (Plate 9), and the distribution of dry pit latrines. Soil conditions require that latrine pits are lined. In addition to regular-sized blocks, the concrete-block Production Unit also located at the Workshop produces 7.0 cm blocks that are used as pit-liners and cannot be purchased locally. The latrine has been designed such that the enclosure can also be used as a bath room. A soak-pit to drain the used bath water is in the design (Figure 7). The slab Production Unit will be discussed in the Cacuaco Workshop section. Here, the latrine and its dissemination will be discussed. Latrines are provided free to requesting households, groups and public facilities. The Project provides the materials and the construction expertise while the requesting group provides the unskilled labour.

To date 385 slabs have been produced, 228 have been distributed, twenty were broken, and there are 137 still in stock (Table 13). Of those distributed, the largest single use was in emergency, refugee camps (87), followed by those in houses (70), many of which were those of Activistas (24), with the rest in schools (21), markets (2), and unspecified places (40). Eight more latrines have already been allotted - in markets (4) and in Activistas houses (4) (Table 14).

Five latrines were visited: two sets were in schools, two were in houses, and one was being constructed in a market. In each case, the latrines appeared well maintained. The value of the dry pit latrine was underlined by a comparison with a clogged up pour-flush latrine in a school that was visited. Users appeared enthusiastic about the latrines. A local NGO, ADEMUS, requested and obtained latrine materials from the Project and is now operating one in the very large Roque Santeiro market, charging NKZ 2000 per use. All this suggests the value and success of the programme.

3.3.3 Issues and Opportunities

3.3.3.1 Objectives of the latrine programme

Some clarification of the objectives of the latrine programme are now required. In the short term, the objectives of the programme seem to be to distribute as many latrines as possible so as to reduce the amount of faeces left on the surface (streets, rubbish dumps etc). The target group appears to be those who are not at present using a latrine, or possibly those with a latrine who wish to reduce water use in flushing. The programme seems to imply the existence, or potential existence of, funds to subsidise construction. The programme appears to be, in some ways, an emergency programme. However these are issues which should now be clarified given the experience of building latrines, the slow rate of production and the cost: decisions are needed, for example, as to whether the target groups is those who can afford to build a latrine (and who require an alternative to the pour-flush) or those who cannot afford any latrine. Sustainability and replicability are important issues.

3.3.3.2 Rate of Latrine Distribution

The number of latrines built to date is a very small proportion of the total need. Not counting the 87 used in emergency refugee camps, 141 have been or are being built in a project area of approximately 12000 households, most without a functioning latrine. (The Project area population is estimated at 100,000 with about 8 people per household). Of these, only 46 are in private houses, other than the 24 in the houses of Activistas. The rate of latrine slab production, although slow, is not the principal bottleneck since there are 137 slabs lying unused in stock (Tables 13 and 14). Indeed, the presence of these unused slabs may at least subconsciously dampen the productivity of the latrine slab producers. Given that the latrines are offered virtually free of charge and given that there is an urgent

absolute need for these latrines, their popularisation and the capacity of the Project to produce and distribute more of these latrines requires examination. Either the Project needs to produce and distribute more latrines or there should be evidence that local entrepreneurs are beginning to market latrines among the community.

Certainly the latrine-slab Production Unit needs a higher demand and therefore higher output rate to be commercially viable (see Table 24 and Section 3.5.3.1).

Any increase in the spread of the latrines should however be preceded by addressing some of the issues outlined below. Otherwise, the credibility of the whole programme could be called into question.

3.3.3.3 Combining Latrine and Bath Area

Construction drawings show these two functions to be combined. A soak-pit is in the drawings for the water run-off from bathing. This feature was not constructed in the house latrines that were visited. Nevertheless, latrines without soak-pits were used as bath areas as well. In the best cases, run-off was directed to an open ditch. The wash function of the latrine should be examined with the view to determining whether it is generally used and if so whether run-off is adequately dealt with. For example, does bathing over the latrine result in water entering the pit and slowing down or not permitting the faeces to dry out? Can water be led to a garden or small tree plot.

3.3.3.4 Anticipating Pit Fill-up

The latrines constructed had one pit. The need for a second pit, to be used once the first had filled up and was drying out prior to being emptied, had not been considered. The system for moving from one pit to another and the emptying of filled pits should be considered. Estimates should be made of time spans between pits given pit size and anticipated frequency of use. Space should be allotted for the second pit, even if this is not constructed at the same time as the first. Drawings and instructions demonstrating the use of the two pits should be prepared. Activistas constructing the latrines as well as users should know of this system and the importance of its use. This is especially important given houses have limited spaces and suitable areas for the second pit unless allotted beforehand. This is especially important for public latrines such as those in markets where, because of frequent use, the pit can quickly fill up. The single-pit latrine in Roque Santeiro filled up in two months. Not anticipating this and the problems resulting could undermine the credibility of the system and the project as a whole.

3.3.3.5 Public latrines

Some latrines have been provided for public and semi-public places. Apparently, these have been identified as places of great need, where large amounts of faeces accumulate in the presence of large numbers of people. But this implies:-

a) a much greater rate of filling of the pit (more people but less opportunity to dry out)
b) need for a model of organisation to control, clean, maintain, and deal with emptying.

It was not clear how these questions were being dealt with, and what fora exist for looking for solutions.

The apparent demand for public latrines as demonstrated in the market Roque Santeiro suggests a number of opportunities.

First, the construction and operation of the latrines in such public places can be combined with public education to promote the construction and proper use of these latrines. In one market visited where a latrine was being constructed, Activistas grasped this opportunity in a rudimentary way by spreading out for public view next to the latrine, a pamphlet about latrines.

Secondly, the willingness of people in markets to pay for the use of a latrine suggests latrines can be used as an income-generating activity as well. Such income could be used to recover construction and/or maintenance costs or to finance other activities adjoining the public space such as rubbish disposal and general hygiene in the markets. Market users may be more willing to pay for the use of the latrines, or pay more if they see that their money is being used to not only operate and maintain the latrine but also to clean up their surroundings.

Finally, willingness to pay for using market latrines suggests that such a willingness can be created for household use as well. Given an estimated 12000 households in the Project area, where most do not have functioning latrines, households' willingness to pay is likely the only way this enormous need can be met.

3.3.3.6 Costing and Financial Analysis

Need for costing and financial analysis: Some of the reasons why a costing and financial analysis of the various components of the Project is necessary and some of the issues involved, have been discussed in the section on water. The need for such an analysis may be even stronger for latrines. This is because, while water is often subsidised, private household latrines rarely are, except perhaps for the very poorest. Households will eventually need to be persuaded to pay for installing latrines. And since latrines are not as strong a felt need as water is, such persuasion is even more of a challenge. Fundamental to all this is the need for clarity regarding costs and benefits involved.

It appears that no financial analysis of the programme and of latrines has been done. As part of this assessment, a preliminary analysis was attempted. This consists of a Construction Cost-Benefit Analysis and a Construction and Maintenance Cost-Benefit Analysis (Tables 19 to 23). (A Slab Production Unit Analysis, Table 24, will be discussed later). The models have been laid out as if the latrines were an income-generating activity, say as in markets, or to assess what households would need to be charged per latrine. The analysis, of course, includes a cost analysis. This makes it applicable to subsidised uses which is mostly the case now. All the caveats mentioned in the section on water regarding the need to check the assumptions and the tentative and preliminary nature of the findings applies here as well. However, again as in the case of the financial analysis of the water component, the financial models developed should help the Project decide on not only how to think about the work in financial terms but also offer a methodology that (with some training and modifications) can be used in financial analysis, planning and management of the Latrine Programme.

Preliminary findings: Despite the tentative nature of the financial analysis, the findings are revealing. For the Project to construct a single-pit latrine, it costs approximately $700.00. The bulk of the costs are in materials (55%). The single most expensive item, as in the case of standpipes, is the concrete blocks comprising 35% of total materials costs. Transport of materials and labour, as in the case of standpipes, is a major cost (almost 30%) (Table 19).

As with standpipes, cost-reductions of pit latrines rely largely on reducing the cost of concrete block and transport. One way of reducing concrete-block costs is to make the concrete-block Production Unit in the Workshop more efficient. Another approach could be to change the pit-liner technology reducing the need for blocks or for cement in the blocks: however this would have to be approached carefully so that there was no danger of pits collapsing.

Transport costs could be reduced somewhat by making the Project's vehicle management more efficient and/or by examining whether it is cheaper to hire commercial vehicles. For example, preliminary analysis suggests that using commercial trucks are cheaper than the real cost of using the Project's 10-ton truck for transporting cement from the factory to the warehouse (NKZ 12 million for commercial 25 tonne truck; that is, $0.37/bag using a 25 tonne truck versus $0.89/bag using the Project's 10-ton truck; Table 11). Also many trucks were observed lying idle waiting for clients to transport blocks at the Kikolo block-making yards run by private entrepreneurs. This suggests that these trucks could be hired at relatively low rates.

To determine what is an affordable cost of latrines for households, the Project will need to undertake a "willingness to pay" study or a household assets, income, and expenditure study. The former will test how much and what type of households are willing to pay. The latter will reveal what the creditworthiness

(assets), and patterns of income and expenditures currently are and therefore how much of what, if anything, can be afforded. The credit-worthiness/ assets check could be useful in a number of ways including examining the possibility of targeting housing loans to specific uses such as latrine construction. (Table 25 suggests for the latter work, some of the information that may be useful and a format for collecting and analysing it. See Appendix 1 for details). Such information is currently lacking. It is not known whether women or men make decisions about building latrines and, if women make such a decision linked to health and household cleanliness, whether women are expected to find the resources to pay for it. This suggests a link with the work on women and income-generation.

To assess **latrines as potential income-generating ventures**, for example in markets where user fees could be applied, the benefits or income measure used is the fees users pay per visit. In this analysis, it is the amount reported as being charged for the use of the latrines at the Roque Santeiro market (NKZ 2000, $0.02). Given this fee and a 40 person years (or 40 visits per day for one year) pit capacity costs far exceed benefits. This is for both construction and maintenance costs (Tables 19 and 20). To break-even, i.e. recover construction costs within the first year, the enterprise would have to charge NKZ 5880 or 5 US cents per visit. If maintenance costs are added, to break-even and start a profit from the fifth year on, the enterprise will have to charge NKZ 12000 or 10 US cents per visit (Table 21). If construction costs were halved, say by some of the cost-cutting measures discussed above, and attendant's salary cut to a third, say by giving the job to one of the sellers as a part-time activity, and raising user fees to NKZ 8000, (7 US cents) profits could be made from the first year on (Table 22).

The above analyses suggest that regardless of whether the latrines are considered for households or public places, as fully subsidised or part cost-recovery or for income-generating ventures, key issues, problems, and opportunities for improving the programme are raised through examining their financial aspects.

3.3.3.7 Other points

The narrow point in the "keyhole" design of the small cover is apparently a weak point, and it seems common to replace it from a stock of spares. It appears that the information about this defect has fed back to the workshop, and the placing of a reinforcing rod along the length of the small cover has reduced this problem. However the adapted cover should be monitored closely to ensure that it is tackling the problem, and experience from Mozambique should be sought.

More blocks are needed for latrines in high water-table areas (where latrines are built partly above the ground, and this must be taken into account in production planning and costing.

Many people will continue to use (and even build) pour-flush latrines, and in terms of public health it may be useful to consider how the dangers can be reduced. Possible actions include public health education for existing pour-flush latrine users about cleanliness, flyscreens, rooves and doors.

3.4 Solid-Waste Removal and drainage

3.4.1 Objectives and Strategies

Objectives: The objectives of this component are to develop a strategy linking community and government for filling in stagnant water pools and for solid waste removal (DW 1992:13-14).

Strategies: Strategies involve an agreement with ELISAL on a plan for waste disposal, infill of eroded areas, and improvement of access roads to disposal sites. The Project provides technical back-up and some resources.

3.4.2 Achievements

As yet little has been achieved. Agreements have been made ELISAL, but have not been honoured. Project Sambizanga management argue they cannot do much without the cooperation of ELISAL for the removal of rubbish from the large dumping points, and have not given this aspect of the Project much emphasis. Meanwhile ELISAL appears to have taken some initiatives in filling holes in the road with discarded rubbish, and there is talk of an initiative to use labour-intensive methods to move rubbish to local sites which require filling. In some places, it appears, residents have contributed to payments for private lorries to remove rubbish.

Local people in Sambizanga Central (Boa Vista) have shown interest in controlling surface drainage on the escarpment above the port.

3.4.3 Issues and Opportunities

Several residents, local-government officials and Activistas considered removal of rubbish as a priority. A spontaneous system among residents for dumping rubbish at a few large dumping-points was evident, and Activistas organise days on which rubbish is concentrated in certain sites, but nevertheless stagnant water and rubbish in the streets is a major problem even during the dry season.

Surface drainage is (objectively) an issue which should be addressed, having implications for cholera and malaria. Promoting dry-latrines, and increasing the amount of water made available through standpipes, implies increasing the amount of surface water (even if only slightly) so is an issue which cannot be completely ignored.

Ways of avoiding run-off water gathering on the surface should be investigated, such as channelling run-off from standpipes to trees or gardens.

There seem to be some initiatives already happening which could be assisted or encouraged. Possibly more could be done to build on what residents are doing spontaneously by rationalising these efforts further through such means as mapping, locating, and sign-posting street and neighbourhood-level dumping points and organising residents to use these points on a regular basis.

The removal of rubbish from the Project area to its ultimate burial place is the key problem, and so far reliance has been placed on ELISAL to do this. A staff-member and/or a consultant along with a team of Activistas should perhaps be assigned to re-examine this question again. Alternatives such as arranging points on the main roads where it may be easier for ELISAL to collect, or using rubbish for local land-fill should be further explored.

3.5 Cacuaco Workshop

3.5.1 Objectives and Strategies

Objectives: The objectives of this component of the project are to consolidate the capacity of the Cacuaco Workshop to provide tools, materials, and training to the community in support of the various other components of the project (DW 1992:13-14).

The Workshop at Cacuaco performs five functions.

First, to produce latrine slabs and concrete blocks of a size and strength suitable for standpipe and latrine construction (production)

Second, to demonstrate how such slabs and blocks can be produced cost-efficiently and as a teaching and training centre (e.g. training Activistas in latrine construction, holding Project planning seminars) (training and extension)

Third, to do experimentation, research, and development on appropriate building technologies and materials production including technological and commercial viability (e.g. Latrine slab, concrete-block making, roofing technology using light steel trusses and local clay tiles) (experimentation)

Fourth, as housing for Project staff and short-term visitors (e.g. consultants).

Fifth, to provide technical back up to the project such as in repair and maintenance of the Project's buildings, furniture, equipment, and vehicles, and through the storage, production and supply of building materials and components for Project activities (e.g. pipe-fitting for water supply) (maintenance).

Understanding the efficiency and productivity of the workshop may depend on clarity about the different functions and objectives. It would be useful if costs were assigned to different budget lines which reflect these different objectives.

3.5.2 Achievements

Given that the Workshop started operations 18 months ago, its level of development and its activities are impressive. It has a fully functioning vehicle maintenance workshop, concrete-block and latrine slab production units, a newly completed building for the latrine slab Production Unit to move into, a roofing technology which is also an innovative experiment in steel truss and clay tiles, and good accommodation for meetings, seminars, teaching, training and housing. It is performing all four functions it was designed to perform.

3.5.3 Issues and Opportunities

A central problem of the Workshop is to get it to operate more efficiently and to increase its productivity. For example, the productivity of both production units - latrine slab and concrete block - appears extremely low. For example, 385 slabs have been produced since the inception of the Latrine Slab Unit, suggesting something less than one slab per day. Project workers estimate output could be anything from three to ten times that amount. While much of this low output can be explained by uncontrollable factors such as some of the irregular materials supply, avoidable inefficiencies are also an important factor. This is fully recognised by the Project. A consultant was hired to review the management of the Workshop and make proposals for its improvement. The project had scheduled the consultant's report to be ready in time for this assessment, but for reasons that are still unclear, the report was not submitted in time.

Given that there is a consultancy dedicated to the Workshop as a whole, this assessment focuses on one key aspect of the Workshop that the Project stressed as needing attention. This was the Production activities, and especially the Latrine Slab Production Unit. Many of the points made regarding this Unit would also apply to the other major production unit, the Concrete Block Making Unit.

3.5.3.1 Developing Commercially Viable Latrine-Slab and Concrete-Block Production Units (Plate 9)

The Project recognises that the production activities of the latrine-slabs and concrete blocks need to be better organised. Quality of product appears satisfactory. Where problems arise, such as when latrine covers cracked, the Workshop appeared to be quickly informed and the Workshop responded with adequate product redesign.

The major problem is developing a system of production that will lead to the slab and block-making Units to become examples of commercially viable enterprises. Capital and labour productivity (output per unit of financial investment and labour) needs improvement. Distinct and appropriate measures have been taken or are being considered to address this issue and to organise and implement more efficient production. Some examples include systems for recording inputs used and outputs produced, separating the different production units, productivity bonuses, etc. There has also been some discussion and some attempts to run these units as if they were "commercial enterprises". Such attempts are still at an early stage and more needs to be done.

Perhaps the single most basic need is to do a simple but systematic analysis of each Production Unit in terms of its production process, specifications, inputs, outputs, quantities, costs, potential income, net profit and therefore commercial viability. This should be done assuming full capacity operations given optimum working conditions (uninterrupted supply of inputs, "best practice" management, a constant market for the output, etc.), as well as actual observed output as monitored over the recent past with all the problems of irregular supply of inputs, short-working hours etc. also carefully recorded. Among other factors, such analysis will help reveal the major impediments to efficient production and where production costs can be reduced most effectively.

A useful way of recording and analysing the production process is through the use of a flow-chart identifying inputs, outputs, points at which these take place in the production process and the timing. A useful way to do a basic financial analysis is illustrated in Table 24 (the example is for the Latrine Slab Unit). If the required information had been available at the time of the assessment, a preliminary analysis might have been done as it has been done for other Project components. Such an analysis can be revealing. For example, we would know the real cost of each slab under actual conditions and "best-case" capacity conditions. Therefore, the level of subsidy and/or required pricing of the slab could also be calculated. We would also be able to identify the inputs that were adding most to cost and, as a result, to examine potential cost-cutting measures based on these identifications.

This analysis and the resulting documented flow charts of the production process and spreadsheet of financial analysis can also serve as guides for the ongoing operations and monitoring of the production units.

Not least, the process of doing the above analysis with the managers and workers of the Production units would begin to increase awareness among them of the importance of operating efficiently and productively, of what they need to do and not to do to operate in this way, and of the consequences of their actions in terms of costs-benefits, losses and gains. Some of this awareness appeared already to be enhanced through their involvement in the analyses that was done during the assessment.

In parallel, in the case of the concrete-block making unit, similar systematic assessments should be done of the similar but privately-run, block making units that are active in Kikolo. We understand that the block-making Unit at the Workshop has already made a visit to these units at Kikolo. This is a good start. A systematic assessment along the lines outlined above will reveal how such an enterprise operates and manages as an apparently commercially viable unit in the much worse off, "real-world" of the Luanda economy. The assessment will likely offer lessons on how to improve the performance of the units in the Workshop. This parallel assessment is especially important given that the aspiration is to make these units commercially viable and competitive, and to devolve their operations to workers who would eventually run them as independent entrepreneurs in the community.

Towards this end, work has already begun on preparing sites in Ngola Kiluange for the location of smaller production units closer to the community of end-users. This move has merit, and may for example, reduce the cost of transporting slabs to end-users. It may, however, be wiser to first develop a model for running the units efficiently in Cacuaco before decentralising production. Because such units are still at the stage of development and still needing close supervision, monitoring, analysis, and training, decentralising them to two or more different locations would make their development into efficient units more difficult. While adequately monitoring and supervising activities in the Workshop remains problematic, adding an additional node of activity to monitor and supervise would add an additional burden on an already extended supervisory and management group.

3.6 Community Development

3.6.1 Objectives and Strategies

Objectives: The objectives are to "promote the self-sufficiency of local CBOs", establish a Community-Project Committee for local control of infrastructure improvements, develop a model for community management of water and rubbish disposal, develop a health-education programme for community workers, ensure adequate technical support for the Project Field Coordinator and community workers, and help develop communication channels between the community and service providers to foster government accountability and community participation.

Strategies: Training of Activistas and CBOs, promotion of relevant linkages, support to local activities through a Project Coordinator based in the Project Office at the health centre in Ngola Kiluange.

3.6.2 Achievements

Very good links have been achieved with the community through Activistas. Activistas reach all parts of the community (which may not be the case with local NGOs). There are 11 full-time and 57 part-time Activistas. the latter being involved on Thursdays and Saturdays. About 45% of activistas are women.

Activistas have a high visibility there, and to have succeeded in raising awareness of various issues and collecting useful information from the community.

There are now many other people who want to become part-time activistas. (The limit on number of activistas is due to capacity to supervise and train.) The Project seems to have engendered a high level of interest due to its presence in the community and its actions. Enthusiasm for the project has been due to publicity, (eg radio,. TV, newspapers since mid-1993), which in turn is due to official acceptance and to Project achievements. There now seems to be better planning so that Sunday and weekday activities are complementary.

The Activistas have run a highly effective health education programme (see section on health, 3.8).

As yet, however, local NGOs and CBOs are weak and only to a limited degree has a model for local control of infrastructure been developed. There is as yet only limited dialogue between the community and government service-providers and only limited popular pressure for better services.

3.6.3 Issues and opportunities

3.6.3.1 Activistas

Activistas are a community-linked model of working rather than a community-based model. They are a a good example of an extension service, making a community aware of a range of activities by different services and feeding back data and reactions to those services. Some of the Activistas belong to community organisations, but until recently there seems to have been little direct cooperation with the organisations.

Those studying extension methods now recognise that there is value in extension agents being part of the community, but that development of community organisations is a different process. (The "cholera project" covering the extended project area outside Ngola Kiluange has recruited Activistas from community organisations, but now recognises that a future challenge will be to integrate their activities back into those organisations.)

Project Sambizanga has begun cooperation with some existing community organisations, and plans to offer assistance to micro-projects from the community: this could have the benefit of indicating natural interest groups in the community (the 1989 survey of community organisations indicated some groups who were

willing to work together to repair schools etc). Such groups could benefit from training in project design and planning, as well as financial assistance.

If Activistas are considered as multi-purpose extension agents then payment in food (in relation to the work done and the results) is appropriate. But payment in food to community organisations and other partners raises questions of dependence, "patrocinio" rather than cooperation, a danger of collapse when food is withdrawn. Clarity will be required when getting into such relationships, and parallel measures to ensure that community organisations increase their capacity to devise their own programmes, understand the relationship between inputs and outputs, and seek their own funding in the future. Training in project planning and design could emphasise the need to make realistic, viable, self-supporting projects which include a food-for-work component (see Section 3.1.3.2 on Training).

3.6.3.2 Participatory development

Participatory development requires considerable levels of democracy and a cooperative spirit in the community. It is a fallacy to expect these faculties to be inherent in communities. It is more realistic to expect that all forms of social interaction (cooperation, competition, conflict and reconciliation) are at work and evident in a community. Projects which address communal needs tend to be beneficial to most members of the community and to enhance cooperation, but there is no certainty that cooperation will be engendered.

External communication inputs are usually required to initiate development activities. But whether people want to or can participate in development activities very much depends on broader factors often outside their control.

Urban Angola has few bases for community development. There is little history of community organisations. Individual survival is paramount. Forced cooperation has perhaps given cooperation a bad name.

But there does seem to be a feeling, by certain people at least, that they need some form of organisation to hold on to in all the difficulties. Some young people seem to be concerned about the future of their areas. Residents' committees do seem to exist in older areas. Churches are an important point of reference for many, especially new arrivals to the city. It does seem that some residents have spontaneously organised themselves for particular activities and even collected money (though in some cases this was to suborn officials to obtain a service).

Investment in communities is always risky, and especially so in the present circumstances of Angola. Having shown itself capable of delivering, Project Sambizanga may find contacts with more people who will work for these uncertain benefits. The Project will now need to show that it is more than a source of funds and "patrocinio", that it can be used as a base of more sustainable

development through training and other support. However, a strategy of strengthening local organisations/partners could be a cost-effective one.

It is as yet unclear what the reaction will be of musseque communities to some of their own neighbours being empowered. While mistrustful of authority from the concrete city, they are unused to authority being within the community, not being brought from the concrete city? This will need to be monitored.

Contacts directly between the community and local government structures are only beginning, though this has been an aim of Project Sambizanga. The Project Committee is still useful for this purpose, and is said to have become more interesting. Other direct contacts will take their own time to emerge, but should not be discouraged.

Existing organisations should be used and supported whenever possible. Some input will be required to strengthen organisations for these roles. Activities should preferably only be initiated when a local organisation can be found. Organisations need to be suited to the activity being carried out. Possible examples are:

* Small local NGOs/CBOs could be the focus of multi-sectoral outreach activities through activistas

* Small local NGOs/CBOs could run an activity such as a public latrine, which requires a localised control and can generate a small income (or at least cover costs)

* Small informal groupings could be supported in mini-projects of community importance (groups of parents wishing to repaint schools, build and run a latrine in a school, groups of families or residents' committees wishing to resolve a drainage problem or organise removal of rubbish)

* Private workshops could manufacture latrine slabs, water containers (preferably as close to the end-user as possible to reduce transport costs)

* Small local NGOs/CBOs could run health posts, making health care more accessible (and they could be supported so as to improve quality and to turn their attention to preventive health)

It would be preferable for DW to stay with core activities (health, water, sanitation), but if it is accepted that the dynamic should come from the community, it may be necessary to accept their priorities. Empowerment may come from providing resources and support for their own priorities, where these are realistic, and may indicate workable groupings who are able to contribute to core activities.

While DW is correct in not wishing to force the creation of community organisations, the relatively high profile of Project

Sambizanga may provide opportunities for cooperation with various types of local organisation which should be taken.

As yet, there is no clear local organisation for guaranteeing the continued existence of standpipes. Possibly a number of levels is involved, and cooperation between them is required.

* People living around the standpipe have to be vigilant, to look out for deliberate/accidental damage: the standpipes are "open", their access pipes are vulnerable to illegal connections, they are by the side of roads (which tend to be ill-defined and often diverted around holes), they are a favourite place to sit (given the absence of other public benches): the people living around have to feel that they benefit form the standpipe, and feel motivated to report anomalies; this requires confidence that they will be acted upon

* A bairro/sector/comuna level group to mediate, call Authority, ensure that higher authorities do take action

* Authority (EPAL, Administrator, police) to look at improper connection papers, over-ride them.

Illegal connections can only be tackled when there is a standpipe as a realistic alternative. But building standpipes without a clear idea of the local organisations which will monitor them is risky. Having shown that Project Sambizanga is serious in building standpipes, it may be possible to begin discussions with the community before building any more. Serious discussions with the community may reveal as much information on this subject as an outside consultation.

3.6.3.3 NGOs, CBOs and user-groups

There is a certain lack of clarity in Project Sambizanga, and in Angola as a whole, between NGOs (non-governmental organisations) and CBOs (community-based organisations). Normally the latter are seen as being embedded in the community, directly representing sections of the community, while NGOs serve the community from outside (while not being part of government). The third objective of Project Sambizanga mentions both NGOs and CBOs, though it is not very clear who actually represent these two categories.

In practice, many organisations which have emerged in Angola are NGOs, in that they in practice serve communities from the outside (although they tend to be as yet small and undeveloped). It is quite valid for Project Sambizanga to work with these organisations. Sometimes they are professional people with links (strong or less strong) with the community of which they profess to be "Friends". (In Cabo Verde, many "Amigos do Conselho X" are made up of professional people living in the capital city who bring back financial resources and technical advice to the isolated communities in their areas of origin.) Only by working with these groups, and monitoring the results, will it be possible to know how genuine is their wish to provide an authentic voice and service for those who do not have the links available. Contact with them indicates that they have some genuinely useful ideas, but also some ideas which involve unsustainable capital investment.

Some activities which Project Sambizanga is trying to develop will require genuinely community-based organisations, those which are made up of users of a particular service or residents of a particular area. The development of such organisations is one which will have to be faced directly.

3.6.3.4 Food for Work

Food-for-work is an appropriate method of payment in certain circumstances. It has gained popularity as food surpluses in the northern hemisphere have grown and continued. The transfer of food from the North to the South is, overall, a phenomenon which depresses food production in the South (as for example in the dumping of meat in west Africa or the discouragement to post-war recovery of food production in Mozambique in 1993 due to food-aid in the form of American yellow maize). In conditions of peace in Angola, care would have to be taken to not slow down the development of rural trade by continuing to import food.

Food-for-work has attracted criticism because often the work component is not properly organised. In some cases food-for-work is more or less free food distribution disguised by a pretence at working. It fits into a paternalistic (often religious) form of development aid where poor people are expected to pretend to work in order to receive aid, but are never expected to end their dependence on it.

Food-for work always involves difficult choices; it implies the exclusion of those who do not work, even though they may be in need.

Food-for-work is suitable for support to Project Sambizanga and associated projects as:-

a) food aid is available, while money for payment is not available for all those associated with the Project
b) food has a more fixed value than local currency, so administratively is no more complicated to handle and is perceived as more valuable
c) local staff would clearly not be able to work effectively unless basic foodstuffs were made available to them and there is a structural food-deficit in Angola
d) it appears that in Project Sambizanga food-for-work has remained under control and linked clear programmes of work.

However payment in food involves costs of storage and distribution.

Project Sambizanga provides food-for-work for some partner organisations. It seems that it has remained clear that this is in exchange for cooperation from those partners, and is not a form of free "patrocinio". It is inevitable that there will be pressure from others to be included on the basis of fairness. For food-for-work to have any impact, it can only be used in well-run, well-supervised programmes where there is a clear relationship between payment and active participation. Partnership with DW will be seen as desirable as it gives access to scarce resources but DW will always have to resist pressures to make these available without clear limits and objectives. (This applies to other resources as well.)

Care will be needed in designing all programmes so that it is clear from the start that resources are only being made available for particular objectives, and not as a generalised subsidy.

3.6.3.5 Local funding

Project Sambizanga is seen as a useful project because it brings outside resources to the area. There is a danger of reliance on aid, a danger of seeing the Project as simply a collection of resources. Some element of local funding would be useful in counteracting this tendency. This could be difficult, but is worth trying on a small scale.

Most people in the musseques are very poor. Perhaps 25% are displaced people with almost no resources. But there also appear to be some people with money. Companies have workers from the area and could be a source of funds. (Hotel Marimba and Tecnocarro gave some food for vaccination campaigns and Tecnocarro seems to have community interests.)

Often, people don't trust collections of money, as they have been duped before; they only want to contribute money afterwards when the job is completed. But given Project Sambizanga's record in achieving results, there could be the confidence to make small local contributions.

3.7 Women/Small Enterprise Programme

This emerging programme holds promise, although it is not part of the original Project programme. At present it consists of two components: a study on household economy and survival strategies, especially from the perspective of women, and, training market women in basic commercial skills. The programme emerged through the initiative of a new DW-A member who works with three Activistas. While both components of the programme are in progress, funding is being sought to expand and deepen the programme. Assessment team members interviewed the programme officer, worked with her in assessing components of the Project that related to small enterprises such as the Latrine Slab production, and reviewed documents such as the proposal to fund this programme. Time limitations did not permit a detailed review of this programme, as priority had to be given to those components that were part of Project Sambizanga. Some preliminary observations can be made.

The programme is relevant to the Project and holds promise for three main reasons. First, a study on the household economy and survival strategies of community members could be fundamental to understanding the conditions facing the community, identifying critical points of intervention that could have the most impact, and not least, helping assess financial and affordability issues such as community ability to purchase latrines and pay for water. Women are believed to make many of the decisions which relate to household health and hygiene, so it is important to know more about their resources. Secondly, issues of small-enterprise development, commercially viability, commercial skills, etc. are already critical and relatively neglected aspects of the Project, as has been stressed here, with regard to various Project components including the Latrine Slab and concrete-block production units. Thirdly, although currently the Project focuses on the physical and social aspects of development, the economic and small-enterprise component could be developed for two reasons:-

- it has already proved complementary;
- in poverty-stricken conditions such as the musseques, income-generation is a major concern of people.

Two issues need to be addressed for these potentials to be fully realized. First, to what extent is the current work in this component - the proposal, the study being conducted, and the training of market women - adequately thought out and being adequately implemented?

Secondly, to what extent is the programme officer willing and able to expand her interests and develop her expertise so that she can work effectively with the existing Project components that are small-enterprise related (latrine slab and concrete block production units, etc.) and on issues requiring attention such as assessments of commercial viability of these components?.

The latter require the officer:-
(1) to extend her interests beyond training to project-design and implementation issues and beyond retail to production
(2) to examine the extent to which women can be involved in Project activities such as Latrine Slab production and marketing; if not pursue these activities with male workers and entrepreneurs, and
(3) to deepen her knowledge of certain small-enterprise related skills such as financial analysis etc.

3.8 Health

3.8.1 Objectives and Strategies

Project Sambizanga is intended to have an impact on the health of the population of the Project area, by improving the quality of health services in the area and supporting the health service, and by developing the capacity of the community to understand health and environmental issues in relation to their daily lives. The strategy has been to improve the physical infrastructure of the health network, provide in-service training for health workers, and use Activistas to raise awareness of health issues in the community.

As part of the assessment, a comparative study was carried out between the Comuna of Ngola Kiluange and the Comuna of Sambizanga Central (as a control area, where no project is being implemented), with the intention of measuring the impact of the project in the area of health. Data from the archives and registers of the Health Centres of Sambizanga and Ngola Kiluange for the 1992-94 period were used to assess the functioning of the Centres. Different population estimates were available for the two areas. The figures from the Municipal Administration were used, these including the numbers of people displaced into the area from rural areas because of the war.

The eventual objective of the Project is to have an impact on the health of the population of the area. However, data are too unreliable and the Project is too new for it to be possible to measure this impact. Data have been analysed to study use of the Health Centre and the vaccination coverage.

3.8.2 Achievements

Tables 26, 27 and 28 refer to consultations and vaccinations realised in the two Health Centres in the period under discussion. The number of consultations carried out at Sambizanga Central Health Centre was higher, though the population covered by this Health Centre is greater, it has a higher number of staff and covers the whole Municipality with specialities not available at Ngola Kiluange. (Sambizanga Central has four doctors, 65 medium level technicians and 71 basic level technicians; Ngola Kiluange has 1 doctor, 10 medium level technicians and 8 basic level technicians.)

Between 1992 and 1993, the number of consultations carried out by nurses at Ngola Kiluange, without referring the patient to the doctor, increased markedly, reflecting the in-service training which the nurses received (through Project Sambizanga). The workload on the Doctor therefore reduced and she was able to carry out specialised consultations in Gynaecology and Obstetrics.
Standardising the data (as if the population for each Health Centre was 100,000) indicates a slightly higher rate of consultations for Ngola Kiluange (see Table 29).

Table 30 shows the number of vaccinations carried out in 1992 and 1993 in Sambizanga Central and Ngola Kiluange, per 100,000 population. Many more vaccinations were carried out in the latter per head of population than in the former, and while there was a slight increase from 1992 to 1993 in the former there was a very much greater increase in the latter. (The population also increased from 1992 to 1993, but in Ngola Kiluange the increase in vaccinations outstrips possible population increases.) Mobilisation by the activistas of Ngola Kiluange seems to have resulted in a considerable increase in vaccination coverage.

All those interviewed recognised the benefits to the Comuna of Ngola Kiluange of Project Sambizanga. The Doctor of the Ngola Kiluange Health Centre indicated that there was a great improvement in the front-line services carried out by the nurses (due to in-service training) both in quality and quantity.

3.8.3 Issues and opportunities

* One of the objectives of the Project is the improvement in access to services. This has been done by improving services at the level of the Comuna. More could be done by supporting the health posts of Val Sarroca and Sao Pedro da Barra taking services closer to the community.

* Observation of the work of the activistas in house-to-house visits showed that they make many recommendations regarding diarrhoeal diseases, but do not give the same emphasis to the fight against malaria. Possibly the activistas should be trained further in strategies against malaria. Official data shows malaria as being a slightly greater cause of illness and death in Luanda than diarrhoeal diseases, but

possibly the data for malaria also includes other fevers (flu and other viruses). Care would be needed in defining realistic strategies against malaria.

* A more systematic approach may be needed to house-to-house visits, with a map of when activistas visited an area, so that future visits can be planned and so that changes in awareness and behaviour can be linked to visits. Activistas could be more active in looking out for problems that were found in a particular area on the last visit?

4 CONCLUDING STATEMENTS

4.1 The interim review and assessment

The interim review and assessment was intended to:
a) allow modifications to the basic strategy for the final part of the project 1994-5 (either to adapt to changed circumstances or to correct problems);
b) provide points of reference which could be of use in planning strategy for beyond 1995, providing continuity in various directions without heavy inputs.

Clearly much has been achieved by Project Sambizanga in difficult circumstances. There is a strong basis for developing other activities in Angola beyond the end of Project Sambizanga. Some adjustments to Project Sambizanga in 1994 will make it more feasible to build on its experiences for the future.

It is recognised that many initiatives of Project Sambizanga were experimental and 1994 is an appropriate time to assimilate the lessons learnt. As well as subjective experience, Project Sambizanga now has data available on costs and resources and it is now possible (and clearly necessary) to take into account the economic situation and the affordability of investments.

Opportunities have been taken to operate over a wider geographical area, with new partners and to tackle new subjects. It is already recognised that it is necessary to consolidate before moving forward and to consider priorities.

There has been some ambiguity in the objectives of the project, their priority and their link with strategy, which has so far allowed flexibility and a rapid response to changing circumstances. Particularly given the objective of "developing a community-based model" which could be of use to various partners, it may now be appropriate to more carefully articulate objectives and strategy, clarifying what are primary and secondary objectives, whether there is a lead sector (such as health) or an integrated approach, why a particular strategy is appropriate, and what guidelines can be passed on to others. Articulating these points could help DW to further clarify its own role.

The lessons learnt and some of the emerging experiences will need to be articulated and evaluated, and more explicit models developed.

Project Sambizanga has operated in an area and era of rapid and unpredictable change, and its achievements indicate an ability to operate in such an environment. Flexibility has been maintained while keeping modifications within reasonable limits. Project Sambizanga has not allowed "emergency" pressures to deflect it away from working with local communities and local government. Nothing can be predicted for the future except continued rapid and unpredictable change. This is an increasingly common phenomenon in Africa (and also other parts of the world). Account will need to be taken of unpredictability: partners will need to be encouraged to include it in their plans and to make appropriate responses; rapid and clear feed-back from the front-line and decision-making based on it will continue to be required; programmes which have invested over the long-term in relations with people and organisations have adapted best to crises (and Project Sambizanga is an example), so it will be essential to invest in emerging organisations and in relations with them; complex situations require simple and visible systems of frequent information collection which are transparent, collect only necessary information but increase participation and understanding.

The Project has been a point of stabilisation in very unsettled times and gave support to those involved in late 1992, giving them a context to organise themselves. Activistas (with very little help) developed sanitation activities in refugee camps (a lesson in aid for which they got very little credit). Project Sambizanga was one of few projects to continue to develop in late 1992.

4.2 Working with the community and local government

A great deal has been achieved through the use of Activistas, both full-time and part-time. They have been instrumental in developing links between services and the community. They have a high visibility, have raised important issues and collected valuable information. However it should be recognised that this is a community-linked model not a community-based model. As such it could be an effective, replicable and sustainable model for extension of services to the grassroots, encouraging participation, transmitting essential information and collecting data. It is not cost-free, but can be cost-effective if Activistas are used for a number of purposes and their work is well-planned. However a community-based model is different and implies working with autonomous groups in the community. Project Sambizanga will need to address the difference between the two, and develop a methodology and strategy for a community-based model. Training of community-based groups, and knowledge of such techniques as PRA which help autonomous groups to effectively plan their activities, will need to be developed.

An assumption had been made that local government would develop, following on from national elections; this has not happened, though some parts of local government have shown more interest in Project Sambizanga. Project Council meetings, including the community and local government, have continued and become more dynamic though as yet there are few signs of spontaneous contacts between the community and local government.

4.3 Technologies

Little progress has so far been made in addressing the problems of rubbish removal and drainage, and there appears to be a demand from local partners for these to be addressed.

Good progress has been made in encouraging home- and local-control of water quality. Progress has been made in developing a network of standpipes. It is crucial to address the organisational aspects of standpipes, as they will only prove to be a sustainable and replicable technology if there is vigilance in maintaining them: the standpipes built are open and vulnerable. This will probably require support from the people benefitting from the standpipe, linked to a community-level organisation, and linked to the Water Company and the Municipal Administrator. A start should be made on this before extending the water system to new areas.

The latrine slabs which are being made and distributed appear to be an appropriate technology for the intended purpose. People seem to have been persuaded to stand over the latrine pit, thus allowing use of a dry-latrine technology, providing an extended life of a latrine-pit. Small design problems appear to have been fed back to the workshop and to have been overcome. However there seems little awareness among users or activistas about what will be done when the pit is full (even though this should be a long away off). There is a demand for public latrines, which presents many new opportunities but which raises many new questions (rate of filling, moisture-content of contents, hygiene) which need to be addressed urgently.

Latrine-production will only be a viable and replicable technology if questions about the costs and organisation of production are addresses.

There is a need for some separation of the functions of the workshop at Cacuaco (production, extension, research, project maintenance back-up) and more serious attempts to cost all activities. Improvements in output and efficiency are required if the workshop is to serve as any kind of model for small production units. Costings were done of a number of activities, which will assist in improving efficiency and testing the sustainability and replicability of the various initiatives taken.

4.4 Strategies

Community and governments partners expressed satisfaction with working with Project Sambizanga, and seem keen to find solutions in a partnership with Project Sambizanga. However, the possibility of accessing funds through the Project is obviously a key consideration and it will be necessary to continue to monitor the interest of partners in seeking viable solutions as well as their interest in funding.

Rethinking strategies towards community organisations, small enterprise development and other subjects will require a rethinking of the training programme to support future directions (such as project planning and costing, small business development).

The view was expressed clearly that Project Sambizanga as a whole is not seen as a model: there is no wish to continue to work in such an intensive way in a small area, either in Ngola Kilaunge or in other areas. The model for DW's work that seems to be emerging is of a series of projects supporting different partners (the water company, NGOs in health, NGOs in community infrastructure, latrine production and extension). The full shape of a future programme needs more discussion, internally and with potential funders, in the next year.

It may be helpful to draw up guidelines which will allow DW to measure such opportunities against skills, strengths and cohesion of DW, and to ensure that there is a procedure for formally evaluating and approving/rejecting such opportunities. DW may also find it helpful to periodically (annually) review its range of projects to maximise cohesion and positive interchange between projects, and to identify complementary areas where opportunities should be looked for in line with an overall strategy.

Project Sambizanga has already made it clear to the community of Ngola Kiluange that it does not intend to continue to work in the same way after 1995. A clearer programme of disengagement is needed, with a strategy for supporting the initiatives that have begun and need to be maintained and those community organisations which have begun to emerge.

ACKNOWLEDGEMENTS

The authors of the report would like to acknowledge the assistance of all those who willingly gave their time to provide information for the Interim Review and Assessment.

ABBREVIATIONS

CBO	Community-based organisation
DW	Development Workshop
EPAL	Water Company of Luanda (a State company)
ELISAL	Saniatation Company of Luanda (a State company)
MINSA	Ministry of Health
NGO	Non-governmental Organisation
PRA	Participative Rapid Appraisal

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APPENDIX I METHODOLOGY FOR THE FINANCIAL ANALYSIS OF PROJECT COMPONENTS

The following briefly describes the method used for a simple financial analysis of project components. The analysis consists of 13 spreadsheets presented here as tables. They cover the following: labour costs, vehicle/transport costs, building materials costs, community water standpost cost-benefit analysis, latrine cost-benefit analysis, latrine slab production cost-benefit analysis, and household economy profile (Table 25 suggested data collection and analysis proforma).

1 LABOUR COSTS (Table 6)

The table lists the main categories of labour used, from expatriate professionals to local unskilled, casual workers. Since payment comes in many forms, the have been identified and their dollar values as monthly payment listed. These forms of payment include an official monthly salary in Nuevo Kwanzas (NKZ), salary paid in dollars, 'food for work' payments, and benefits. Totals are in monthly, daily, and hourly rates. Sources of information and assumptions and calculations underlying the figures are given.

2 VEHICLE COSTS (Tables 7-10)

The costs of the four main types of vehicles used by the project are analyzed and presented in separate spreadsheets. These are the 10 ton Flatbed cargo truck, the 10 ton dumpster, and the Landrover 7-9 seater, and the Landrover Pickup. In each case the spreadsheet consists of the following:

2.1 Basic Characteristics of the vehicle (model, size, full capacity use, actual capacity, and percentage of the full capacity that is actually utilised).

2.2 Cost-Benefit summary of using the vehicle giving annual, monthly, and hourly costs assuming the vehicle is used to its full capacity. Benefits in terms of the hourly costs given its actual utilised capacity are expressed as an hourly (rental) rate that must be charged to cover these costs.

2.3 Cost analysis detailed. This includes capital costs (purchase price, shipping etc) with a straight-line depreciation, and annual operating costs (petrol, repair, etc). It also includes an overhead assumed here to be 10% of total costs.

Information sources, assumptions, and underlying calculations are noted.

3 BUILDING MATERIALS AND THEIR TRANSPORT COSTS

Eight of the major materials used are analysed: cement, sand, gravel, concrete block, roof sheet, pipes (galvanised iron an polyethylene), mild steel reinforcing bars, and water. These are analyzed in terms of their costs at the factory gate or point of extraction, transport and labour (loading and unloading) costs from this point to the two major points of storage: the DW warehouse and the Cacuaco Workshop (which are approximately of equal distance), and transport and labour costs from these storage points to the construction site (using Cacuaco to Sambizanga Field Office/Health Centre as an average distance - 12 km).

Two sets of transport costs are used: cost of renting a vehicle (where information was available), and cost of using a DW vehicle assuming an hourly rate based on actual capacity utilisation (calculated in Tables 7-10). The latter rate is the cost of keeping the vehicle on the road given its actual hourly use per day.

Underlying assumptions and calculations are noted.

4 COMMUNITY-WATER STANDPOST: COST-BENEFIT ANALYSIS

This consists of three spreadsheets, one each for: construction costs-benefits; annual maintenance patterns and costs; and construction and maintenance costs-benefits. The spreadsheets were calculated for the first five years of the Project.

4.1 Construction Costs-Benefits

This spreadsheet is divided into three interrelated sections, describing: (1) basic characteristics, (2) cost-benefit summary, and (3) construction costs.

4.1.1 Basic Characteristics

This describes the location, standpost type, land area used, the pipe length from mains to standpost, capacity output, actual output, households served and cost of commercial water (water purchased from commercial vendors on a per bucket, per litre basis; that is, not bulk purchase rates).

4.1.2 Cost-Benefit Summary

This summarises the costs and benefits. Costs are per litre of water output, total, and per household using the standpost (calculated from a catchment area of a certain number of households). Benefits are litres per year, litres per household per year, value of savings per litre from not purchasing water from commercial vendors, resulting total benefits per year per standpost and per household per year. Net benefits are the difference between the costs and the benefits (equivalent to possible user-fees or water rates to be charged to recover standpost construction costs).

4.1.3 Construction Costs

This identifies all inputs used in constructing the standpost. It covers building materials, materials' transport, labour, labour transport, and an overhead for such costs as system design, management time, etc. The inputs are identified in terms of quantities, costs per unit at source (e.g. factory, gate, etc.), at storage point (e.g. warehouse, Cacuaco), total cost, and cost per $100 of total cost.

This last set of figures gives a distribution of costs of each input as a percentage of total costs. This is useful in identifying which inputs contribute most to cost. It also identifies how many dollars per $100 spent on each standpost, goes to each input. This is useful in analysing 'second-round' distribution of benefits among inputs through standpost expenditures in terms of dollars received by each input. For example, for every $100 spent on the standpost programme, $12 would be distributed to the concrete block makers, assuming these blocks were purchased commercially.

4.2 Annual Maintenance Costs-Benefits

This identifies inputs into repair and maintenance in terms of salaries for the standpost attendant (or water monitor), in terms of equipment for repair and maintenance, and by types of repair and maintenance. It identifies costs of each of these items and an anticipated pattern of when these costs can be typically expected to take place over a 12 month period. These costs are totalled by input and monthly and the percentage of total costs for each item also given. (the percentage figures are useful as described in 'A' above.

Underlying assumptions and calculations are noted. In this case the underlying calculations are also included in formulas linked to the main part of the spreadsheet. This allows for the automatic changes to that main part as a result of changes in the underlying calculations.

4.3 Construction and Maintenance Costs-Benefits: First Five Years

This summarises construction and maintenance costs over the first five years. It also identifies benefits in terms of litres of water produced per year and their dollar value (gross benefits). The difference is the net benefit. Gross benefits are, for example, dollars saved by households for the litres of water they use from the standpost and therefore do not have to purchase from vendors, assuming they are not charged for standpost water. Net benefits are, for example, dollars saved by households for the litres of water they use from the standpost and therefore do not have to purchase from vendors at commercial rates. (This example assumes that households are charged for each standpost to achieve full cost-recovery. That is, that they are charged to cover the full construction and maintenance costs of the standpost).

5 DRY-PIT LATRINE AND WASH-ROOM: COSTS-BENEFIT ANALYSIS.

5.1 Construction Costs-Benefits

Benefits here are uses per year. This has been monetised adopting user-fees. (Here, fees are those charged for use of the latrine in Roque Senteiro market). Otherwise, the format is similar to 4.1 above.

5.2 Construction and Maintenance Costs-Benefits: First Five Years

See 4.2 above for description.

6 PRODUCTION UNIT, FINANCIAL COST-BENEFIT ANALYSIS. EXAMPLE: LATRINE SLAB PRODUCTION.

This is an example of a spreadsheet that can be used, with modifications, for simple financial analysis of small production units. It is similar to 4 and 5 above. The few quantities and costs that were available have been input only for illustrative reasons. The full development of this spreadsheet model will have to be undertaken as part of future work when more details regarding the operation of this and other production units are can be researched.

7 HOUSEHOLD ECONOMIC PROFILE: HOUSEHOLD CHARACTERISTICS, ASSETS, INCOMES, AND EXPENDITURES (Table 25)

This spreadsheet can help collect, analyze, and present data on household economy, and do simple financial analysis of households. It can do this for individual households as well as for a cohort of households. It is here presented at a preliminary stage of development. Fully developed it can, amongst other uses, be applied to assess household survival strategies (for very poor households), household economic conditions, ability to pay for services (e.g. water, housing), and ability to borrow and make loan repayments. The spreadsheet is divided into five sections.

7.1 Basic characteristics: of the household(s) such as location, Number of members, etc.

7.2 Assets: Such as land, house, furniture and utensils etc.

7.3 Incomes of household members from all sources such as salaries, earnings from kitchen gardens, home businesses etc.

7.4 Expenditures such as house rent or loan repayments on house or other borrowing, food, clothing etc.

7.5 Incomes-expenditures - Net Incomes Statement a summary of the above information to get a 'net worth' of the household.

APPENDIX II BACKGROUND INFORMATION, IMPORTANT CHANGES, RISKS AND ASSUMPTIONS MADE

Various assumptions had been made (and risks evaluated) in planning Project Sambizanga in 1992. Discussions at the beginning of the Review indicated how these assumptions had worked out in practice.

The population of the Project Sambizanga area has increased rapidly since 1992, perhaps reaching 120,000 (but all figures are guesses). The overall population growth of Luanda over the years is as follows:-

Population of Luanda		% in musseques
1970	500,000	50
1980	1,000,000	
1990	1,750,000	80
1992	2,000,000	
1993	2,500,000 plus	

The process of democratisation in Angola was interrupted immediately after the elections of September 1992 by the rejection of the results. The atmosphere of optimism was broken. The project has maintained direct links with the community, and there remains the possibility for community participation though community groups have not developed rapidly. The possibility of developing links between residents of the musseques and government departments still continues, but the war and the presence of only one effective political party means that there have been no further democratic developments and decentralisation of government services . The intention was to provide grassroots structures with the capacity for long term growth. The activities carried out since 1992 have strengthened links with these groups, but there still remains much to be done if voluntary organisations are to carry activities forward after 1995.

Project interventions were seen as a bridging activity, supporting a specific community through a transition from a centrally controlled state to a democratic state where local development will depend on a form of local government with which communities can communicate. While some features of the centrally controlled state have gone, there has not been a full transition. In some ways, Angola is stuck in the transition with no clear way forward. How to promote partnership between the community and public services has become even more experimental. The provision of safe water still appears to be the most pressing expressed need. The reduction of water pressure in the city as a whole (due to UNITA attacks on the pumping station and electricity supply), the growing economic pressures making the cost of water a burden on family economies, the need to spend time on collecting water which could be spent earning money in some way, seem to make water an even more pressing concern.

The outbreak of cholera in early 1993 indicates that improved sanitation is an objective need, even if it is still not clearly

expressed.

The economic situation is serious. Changes in economic policies have not led to IMF support or foreign investment, but have caused unemployment. Government control over the economy is weak, buying power is falling rapidly, the population of Luanda growing rapidly while job opportunities are falling. The immediate concern of almost all sections of the population is survival, though there are some individuals and companies with resources.

DW feels that initiatives must take into account the economic situation, the affordability of investments on a wider scale (with and without subsidy) and maintenance (and now for the first time the Project is beginning to have data available on costs and resources. People had never articulated economic help or income generation as a need (they had never expected this sort of help) but the time may have arrived to explore this area.

The focus of Project Sambizanga continues to be the Comuna of Ngola Kiluange. However, on the basis of experiences gained in Ngola Kiluange, new relationships have been made which link the project to new initiatives with new partners and in new geographical areas. It is difficult to evaluate Project Sambizanga without also looking at these spin-off projects.

(i) CHOLERA PROJECT

Providing better protection against diarrhoeal diseases in certain areas outside the pilot area with a high risk of cholera, through use of the activista model.

The cholera project involves taking ideas from Sambizanga to other areas, and involves a diversity of bairros and situations. Working with people from local government, local health workers, community and church groups. A future difficulty recognised will be to re-integrate their work back into their own structures, or to help them to exist on their own. Local organisations providing curative health care at the base level have been encouraged to look at preventative health activities.

In older-settled areas (eg Sambizanga Central) residents' committees are stronger. Among newer immigrants from rural areas, evangelical churches are more important. Experience is showing that more activistas are men; younger women in present situation do not feel able to take initiatives, while older women tend to be very busy. A lot of negotiations are required to get things done, and men seem to be required for this negotiation. This may also exclude the poorest of the poor. It is planned to work with the groups to analyse their work and decide their futures in mid-1994.

(ii) NGO AND HEALTH PROJECT

Upgrading the capacity of local NGOs in Luanda as a whole who wish to provide health services, especially in the area of community health.

(iii) STRATEGIC BUILDING MATERIALS PROJECT

Upgrading the capacity of, and providing strategic inputs to, local NGOs in Angola who wish to rebuild, or build in areas of new settlement, community infrastructure.

(iv) LATRINE PROJECT

Encouraging demand for, explaining use of, training producers of, setting up autonomous production of, producing dry-pit latrines using Mozambican-model slab and using activistas as the community link; increasing capacity of Ministry of Health through secondment of MINSA staff member. The Project is seen as providing resources and information about dry-latrines to the Ministry of Health. At present, the production difficulties are greater than the demand difficulties.

(v) WATER PROJECT (IN PREPARATION)

Increasing capacity of EPAL to provide water services in Luanda.

(vi) MARKET-WOMEN

Investigate informal economy and survival strategies, understand women's roles in household, develop training to improve economic survival strategies.

The economic programme comes from Susan Hurlich's survey of 1990-92, of micro-enterprises, and her survey of women in Angola. DW had thought that there may be some potential in a programme linked to micro-enterprises, and the informal sector. Funding has been difficult, but meanwhile a training needs assessment has been done. The project will be about training:

a) basic business and management skills
b) re-inforce participant network for community development needs
c) prepare an intervention programme (eg training guide, training for trainers) for Angola, Angolans.

100 women in informal sector have been surveyed, contact maintained, through 2 activistas. The programme has concentrated on mini-wholesalers, women who sell by the bag not by the item, usually women who have at least 4ā classe, who can read and write, are not absolutely desperate.

FIGURES

Figure 1: Map of Africa locating Luanda, Angola

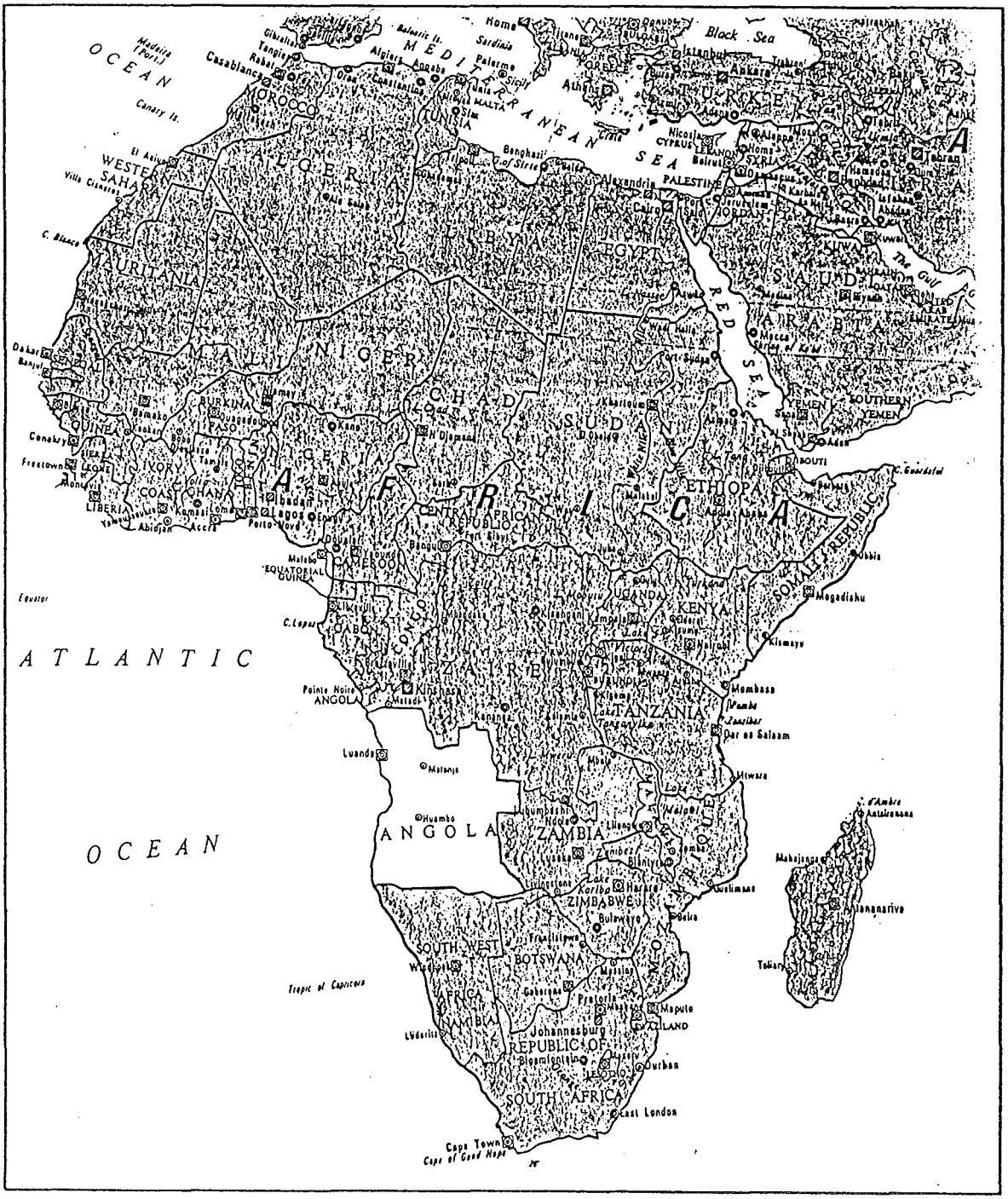
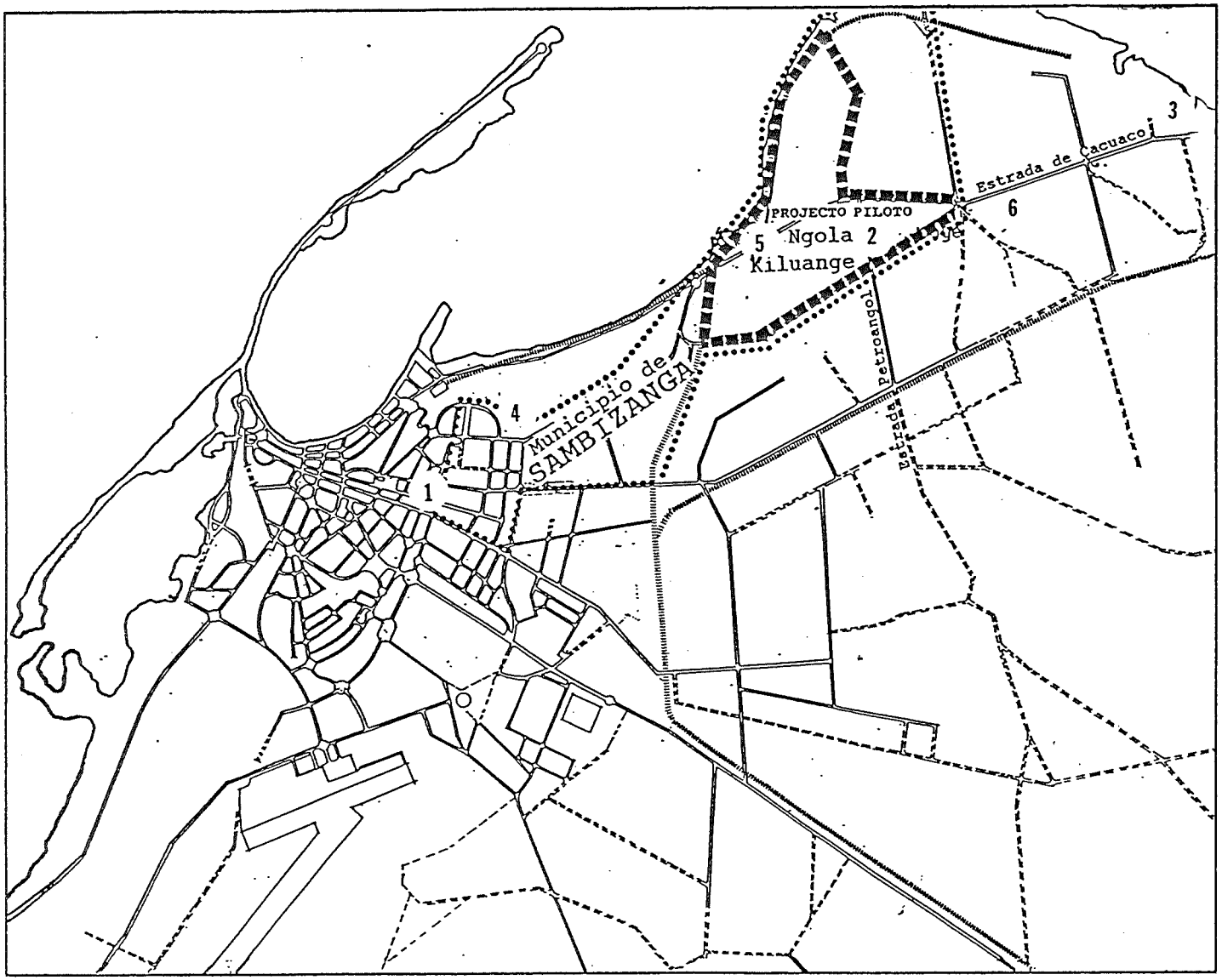


Figure 2: Map of Luanda locating Sambizanga Project area and some activity nodes



1. DW/Project Sambizanga Office
2. Project Sambizanga Field Office
3. Cacuaco Workshop
4. Sambizanga Municipal Government
5. Ngola Kiluange Comuna Administration
6. DW/Project Sambizanga Warehouse
7. Building Materials Production & Market Area - Kikolo
8. Roque Santeiro Market

Figure 4: Map of Ngola Kiluange Pilot Project area, activity nodes, and water-suppy network.

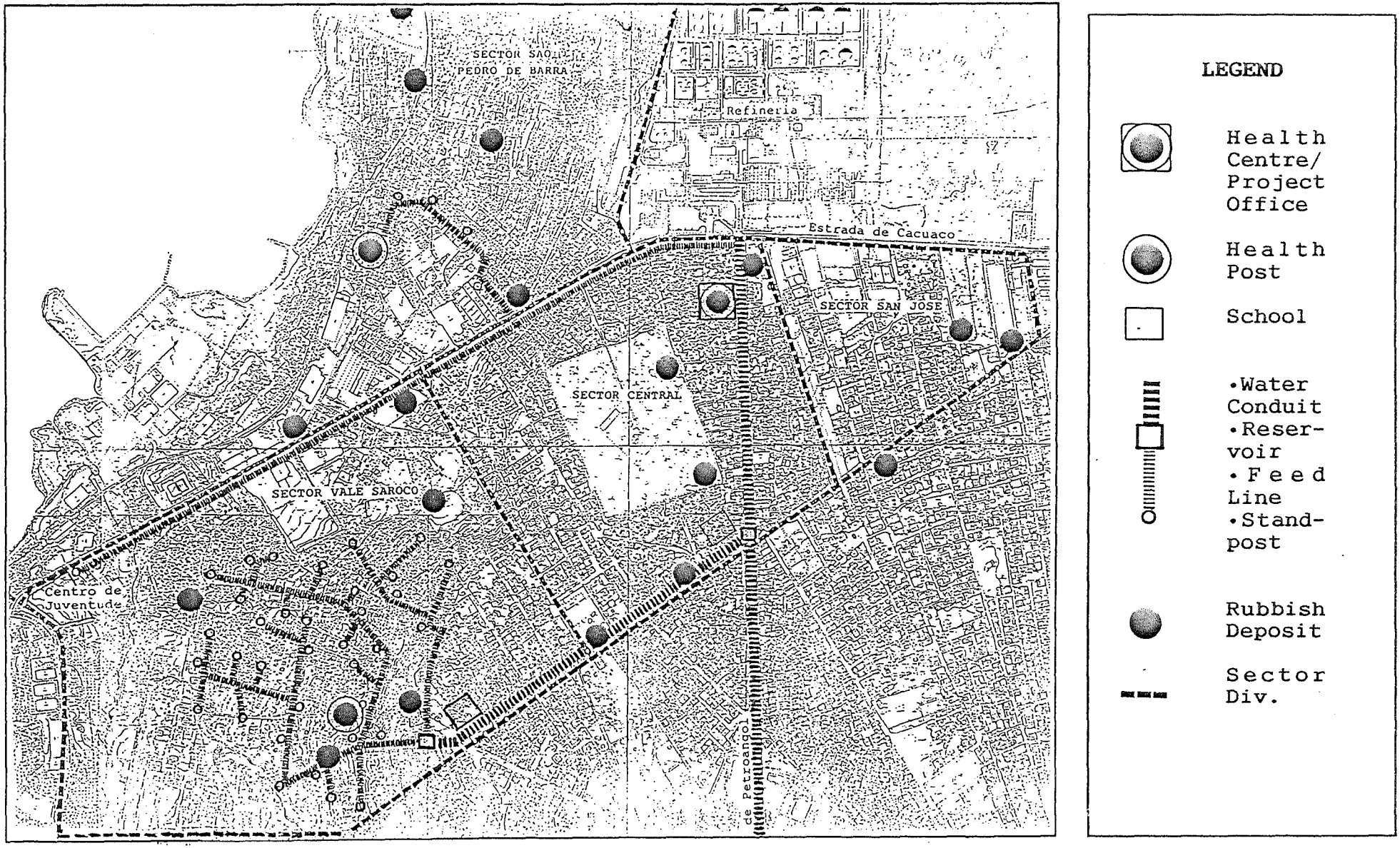
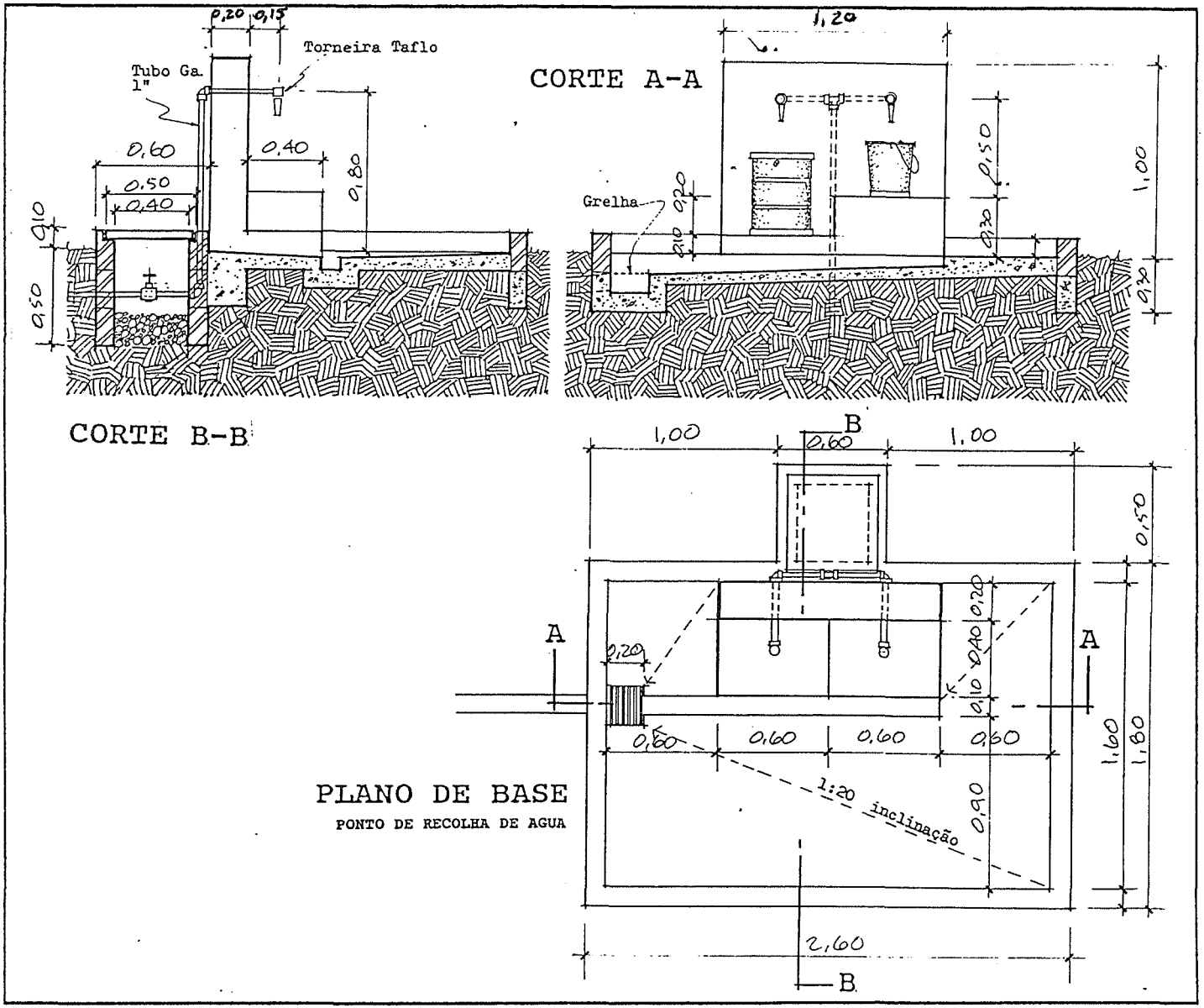


Figure 5: Drawing of Water-supply standpost, ground-level type.



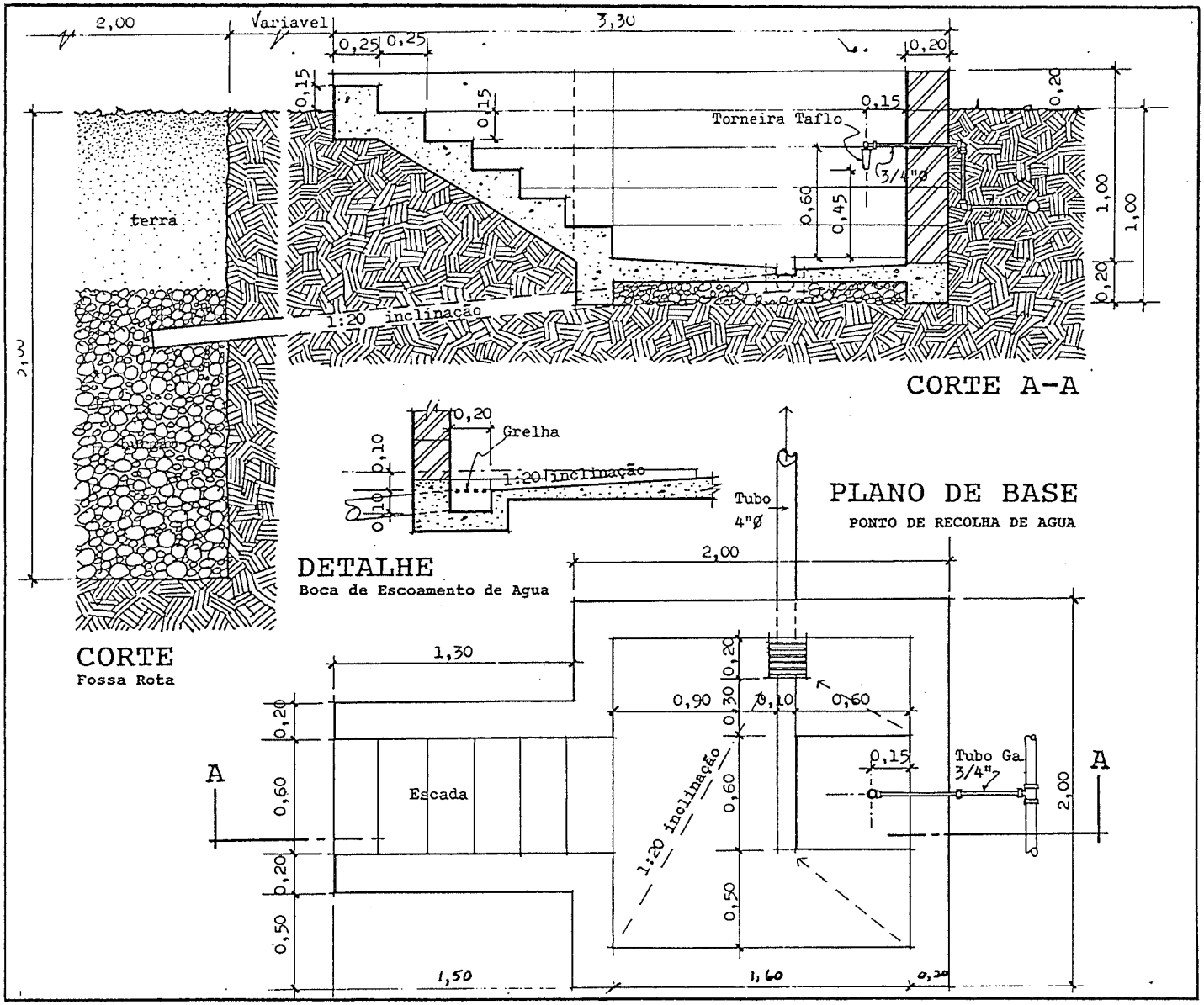
STANDPOST CONSTRUCTION

C r o s s Section A-A

C r o s s Section B-B

Foundation Plan (Point of Water Collection)

Figure 6: Drawing of Water-supply standpost, below-ground type

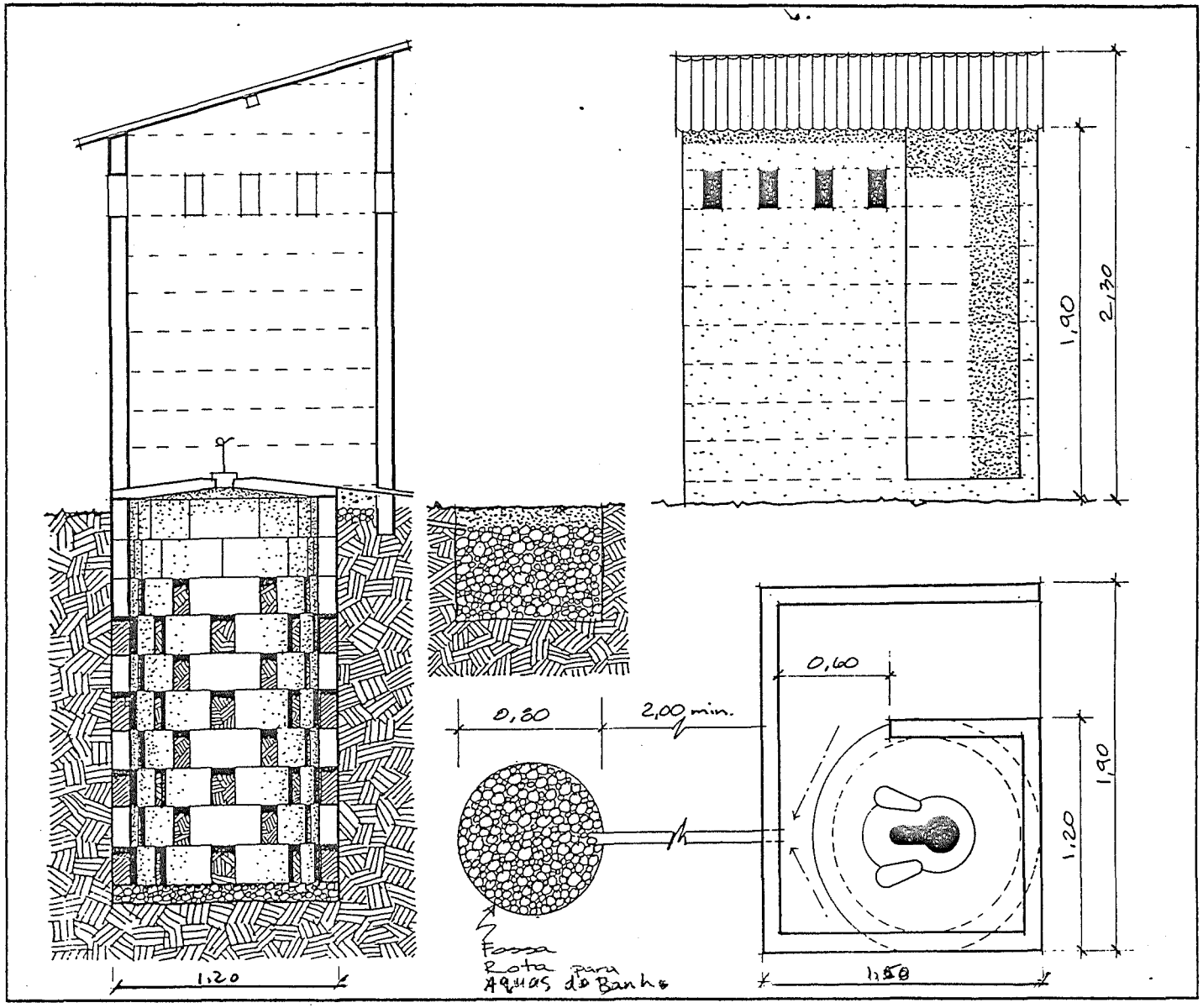


Note: Point of Water Collection for Low Pressure Situation

Materials:

130	b l o c k s (40x20x20)
10	bags of cement
2	m.³ sand
7	m.³ gravel
4	m. tube/pipe (4")
3	m. galvanised pipe (¾")
2	swivel joints (¾")
1	joint (¾")
1	tap (TAFLO)
1	metal grill (20 cm.)

Figure 7: Drawing of Dry-pit Latrine



IMPROVED LATRINE CONSTRUCTION

Materials:

280	blocks (7x20x40)
1	circular lid slab
3	bags of cement
3	fibre-cement roofing sheets
0,5	m.³ gravel
0,5	m.³ sand
1	rafter/beam (5cm.x8cm.x3m.)
1	drainage pipe (50mm.x2m)

TABLE 1: PROJECT DESIGN AND FUNDING FLOWS: 1992/93 - 1995: FROM FUNDING SOURCES TO RECIPIENTS
desgfund ($'s in 1000's)

BILATERAL	MULTI-LATERAL, INTER-MEDIARY	EXECUTING AGENCY	PROJECT	EXPENDITURE CATEGORIES	COMPONENTS
					A:TRAINING:
					1: Modules:
					a:Water & Sanitation
					b:Primary Health Care
					c:Communication, Organisation, management
	[how many				d:Civic & Community
A:DIRECT	$, through			1:Salaries	Action
FUNDING:	what, to			2:Equipment	2:Continuing Education
CIDA, ==)	what uses, ==)	¦¦		3:Materials	for Health Personnel
SIDA,	do funds	¦¦		4:Services	
IRISH	from these	¦¦		5:Training	B:PHYSICAL UPGRADING
GOVT. ?	flow?]	¦¦		6:Travel	1:Community Water Supply
	($?)	¦¦	PROJECT	7:Transport	2:Solid Waste Disposal
		¦¦	SAMBIZANGA:	8:Procurement	3:Latrine Production &
		¦¦	A:TRAIN- ==)	& Secretarial==)	Placement
B:BILATERALS		\/	ING	9:Monitoring	4:Concrete-Block
CHANNELED	($2315.1)		B:PHYSICAL	10:Admin.	Production
THROUGH: ==)	UNICEF ==)	DEVELOP- ==)	UPGRADING	Overhead	5: Roofing Technology
		MENT			
C:EUROPEON	ONE- WORLD ==)	WORKSHOP ==)	C:COMMUNITY		C:COMMUNITY
ECONOMIC	ACTION		DEVELOPMENT==)	As Above ==)	DEVELOPMENT:
COMMUNITY ==)	($563)				1:Community Activistas'
	leading				Training & Management
	Consortia				2:Angolan N.G.O.'s &
	of 6?				C.B.O.'s Support:
	N.G.O.'s				Training, Project
	(fund-				Development, Resourcing,
	raising				Networking
	agencies)				3:Community
					Workshop:Community
TOTAL FUNDS:	$2878.1				Technologies Development
					& Diffusion: Water,

Sources: A. Cain, budget records, 1992 Project Proposal

Sanitation, & Maintenance

TABLE 3: BUDGET DISTRIBUTION: BY EXPENDITURE CATEGORY
budgexpn 1992/93 - 1995, US$

EXPENDITURE CATEGORY CATEGORY	ITEM	DISTRIBUTION TOTAL	% OF TOTAL	RANK
1: Salary	a: Technical Assistance	504000	17.56%	
	b: Local Staff	262700	9.15%	
	c: Consultants & Perdiems	180000	6.27%	
	Sub-Total:	946700	32.98%	1
2: Equipment	a: Technical	181000	6.31%	
	b: Tools	32500	1.13%	
	c: Office	47000	1.64%	
	d: Communication	14000	0.49%	
	e: Computers	20500	0.71%	
	f: Pedagogical	3000	0.10%	
	g: Audio Visual	16700	0.58%	
	Sub-Total:	314700	10.96%	2
3: Materials	a: Consumables	25500	0.89%	
	b: Stationary	22800	0.79%	
	c: Construction	246000	8.57%	
	Sub-Total:	294300	10.25%	3
4: Services	a: Contracts	67500	2.35%	
	Sub-Total:	67500	2.35%	10
5: Training	a: Publications	29000	1.01%	
	b: Printing	73000	2.54%	
	c: Course Placement	58000	2.02%	
	d: Exchanges - in country	31500	1.10%	
	e: Exchanges - in region	56000	1.95%	
	Sub-Total:	247500	8.62%	4
6: Travel	a: In country	24000	0.84%	
	b: Field Trips	12000	0.42%	
	c: Visiting Consultants	46500	1.62%	
	d: Home Leave	145500	5.07%	
	Sub-Total:	228000	7.94%	6
7: Transport	a: Vehicle Procurement	60000	2.09%	
	b: Spare Parts, Repairs	34000	1.18%	
	c: Running Cost & Fuel	29500	1.03%	
	d: Insurance	18500	0.64%	
	Sub-Total:	142000	4.95%	9
8: Procurement	a: Communications, Utilities, Rents, Secretarial, Transportation, Equipment Handling, Storage	209000	7.28%	
	Sub-Total:	209000	7.28%	7
9: Monitoring	a: Programme Development	37500	1.31%	
	b: Reporting & Evaluation	90000	3.14%	
	c: Missions & Conferences	47000	1.64%	
	Sub-Total:	174500	6.08%	8
10: NGO Admin. Overhead		246500	8.59%	5
	TOTAL ANNUAL BUDGET:	2870700	100.00%	

Source: Consolidated from 3-year budget lines in seperate budget sheets of Training & Physical Upgrading, & Community Development. Provided by A.Cain.

TABLE 4: SCHEDULE OF MEETINGS: WEEKLY, MONTHLY, BIANUALLY
meetschd

TIME, PLACE	PURPOSE	GROUPS, PERSONS
MONDAY 1:Ngola Keluanje 2:Women's homes, markets, trng in?	1:COMMUNITY DEVELOPMENT SECTOR: Activistas' Weekly Plan. Minuted. 2: WOMEN/ENTERPRISE SECTOR: Surveying household economy & market enterprises, testing training methods,	1:Daley, Orquidia, 11-71 Activistas. 2:Henda, 3 Activistas, market women.
TUESDAY 1:Ngola Keluanje	1:COMMUNITY DEVELOPMENT SECTOR: Technical support by professional staff. Minutes optional.	1:Daley supporting Orquidia, Activistas.
WED'DAY 1:Ngola Keluanje 2:Cacuaco 3: City 4:where?	1: WATER COMMITTEE. Issues (e.g. maintenance), programming. Minuted. 2:TECHNICAL SECTOR: Production, construction, maintenance. 3:MANAGEMENT MEET: Issues, policy, programming, financing, new initiatives, progress. [minuted?] 4: WOMEN/ENTERPRISE SECTOR: Surveying household economy & market enterprises, training.	1: Cain, Mitchell, Mabungo, 3 Activistas, &/ or Orquidia. 2:Cain, Mitchell, Saadie, Mario, Mabungo, Guillerme 3:Sector Coordinators, professional staff: Cain, Daley, Mitchel, Marion, Orquidia, Hernani, sometimes Mabungo & Henda. 4:Henda, 3 Activistas, market women.
THURSDAY 1:Ngola Keluanje 2:City	1:HEALTH STAFF: In-Service training. 2:WOMEN/ENTERPRISE: Review issues, program, progress.	1:Daley, health staff 2:Henda, Cain.
FRIDAY 1:City	1:STAFF MEETING: Review issues, program, logistics, progress. Minuted.	1:Cain, Daley, all staff, all sectors
SATURDAY 1:Ngola Keluanje	1:PUBLIC-PROJECT MEET:Review activities, especially of activistas, exchange info', obtain feed-back, plan activities. Minuted.	1:Community & government reps., PS professional staff, activistas.

BIWEEKLY 1:City?	1:LATRINES/ CHOLERA PROGRAM:	1:Marion, Hernani
WEEKLY 1:EPAL office	1:PS - EPAL: Information exchange, project collaboration. Minuted.	1:Marion, EPAL technical director - Metadee
MONTHLY 1:EPAL office 2:Ngola Keluanje	1:as above. 2:WATER COMMITTEE: as weekly meet but including community water monitors, including their training.	1:Cain, EPAL technical director, occasionally municipal vice-governor 2: Cain, Mitchell, Mabungo, 3 Activistas, Monitors, occasionally Orquidia
BI-ANNUALLY 1:where?	1:CONSULTATIVE COMMITTEE: Meeting to involve community, govt., and private organisations (major employers) in a) conceptualisation, planning, & review of activities of PS, b) promote collaboration between these organisations & PS, c) provide a forum for discussion among these organisations. Minuted.	A:Community: Resident reps. from 4 sectors (3 are activistas); CBO's - AAF(?), Ademus, FONGA, Church groups. B: Municipal vice-governor, Communa Administrator, EPAL, ELISAL, Dept. of Public Health, Schools, not Water & rubbish, not private employers though invited. 40 - 50 persons.

Source: Compiled through discussions with Project members, Daley, and Cain

TABLE 5: SUMMARY OF TECHNICAL TRAINING FOR APPRENTICES, 1993
sumtrng

PARTICIPANTS: 13. COURSES: 13
TOTAL TRAINING EXPERIENCES:169

LEVEL OF PARTICIPATION & RESULT	PARTICIPANTS	
	NUMBER	%
Observer	47	28
Trained	97	57
Knows Well, Can Do Independently	25	15
TOTALS:	169	100

Source: Information extracted from DW 1993b:21.

TABLE 6: LABOUR COSTS: WATER & SANITATION PROGRAM
labcosts

LABOUR	MONTHLY SALARY PAID IN NKZ, \1 ('000'S)	$VALUE \2	PAID IN $'s	FOOD $ VALUE \3	BENEFITS $ VALUE \4	TOTALS /MONTH	/DAY \5	/HOUR \6
Planr.\Enginr. 1 \7	1527	218	2282	none	1825	4325	216.25	30.89
Planner\Engineer 2	1527	218	none	none	1825	2043	102.15	14.59
Technician 1	740	106	2000	none	1825	3931	196.55	28.08
Technician 2	740	106	none	60	250	416	20.80	2.97
Manager/Admnstr.\10	548	78	none	60	1000	1138	56.90	8.13
Supervisor\Foreman	Saadi, Hernani etc?						0.00	0.00
ComtyWkr/Activista	120	17	none	60	none	77	3.85	0.55
Mason	658	94	none	60	20	174	8.70	1.24
Mason's Assistant	156	22	none	60	20	102	5.10	0.73
Casual, Unskilled	156	22	none	120	none	142	7.10	1.01
Driver \10	423	60	none	60	200	320	16.00	2.29

1/ Follows Labour Ministry's salary scale Guide, 3/93
2/ Uses Bank of Angolas's Floating Exchange Rate of NKZ 7000:US$1 for 3/93. Appropriate adjustments of NKZ to $ values had just been made. Official Exchange Rate for 3/93 was NKZ 2550:US$ 1.
3/ Food Basket: 60 kg. @ $1/kg. (e.g. maize 25kg., beans 20kg., milk powder 5 kg., cooking oil 8 ltrs., Fish 8 tins)

4/ Benefits:	$	per No. of Mths.	Per Mth.
Language Training	5000	24	208.33
Air Ticket	3000	12	250.00
Health Insurance	2000	12	166.67
Housing			1200.00
TOTAL			1825.00
Shared Use: Car			
Capital Costs	37384	5	7476.80
Operat. Maint.	4272/mth/2		2136.00

5/ Working days/mth. 20
6/ Working hours/day 7

7/ Planner/Engineer & Technician 1 = expatriate; Planner/Engineer & Technician 2 = Angolan

8/ Technician 2 benefits paid in $
9/ Lunch provided: per month $
20 @ 1 $/day 20
10/ Benefit amounts to be confirmed ?

TABLE 7: VEHICLE COST - BENEFIT: CARGO TRUCK, 10 TON
vehicobe (Values in US$)

A: BASIC CHARACTERISTICS

MAKE, SIZE:	1994 Cargo truck. 10 tons (10,000kg.), 6.25 m3 (i.e. 1.6:1 weight to volume ratio). Bed Size: 4.27m (14') * 2.75m (9') = 11.72m2 (126ft.2)		
CAPACITY USE	140 Hrs/mth	7 hrs/day	20 days/mth
ACTUAL USE	60 Hrs/mth	4 hrs/day	15 days/mth
% CAPACITY USE	43%		

B: COST - BENEFIT

	HRLY RENTAL	HOURS USED/MTH	VALUE US$ ANNUAL	MONTHLY	HOURLY
BENEFITS:BreakEven	36	60		2152	
COSTS	Hrly.rate@Cap.Use		25826	2152	15
NET BENEFIT				0	

C: COSTS

	US$	YEARS OF USE	ANNUALISED VALUE $
GRAND TOTAL			25826
OVERHEADS	10%		2348
TOTAL CAP+OPERAT.			23478
CAPITAL COSTS	72000	5	14400
Purchase Price	59000		
Spare Parts	5000		
Insurance	1000		
Shipping:toLuanda	7000		
Other			
OPERATING COSTS \1			9078
Petrol, oil etc			1258
Repair, maint.			3400
Insurance			4420
Other			

Sources: For capital costs - Relief & Development Services International Inc. Ottawa, Canada. For operating costs - A.Cain 5/94, as follows: Total annual operating costs for 2 trucks, 2 land-rovers apportioned among vehicles by purchase price of each vehicle as % of total fleet purchase price (Trucks = 34%, Land-rovers = 16% each of total fleet purchase price). Total and apportioned operating costs as follows: Total running costs (petrol, oil etc) $3700 (Trucks = $1258, Land-rovers = $592 each); Repair, maint. $10000 (trucks = $3400, Land-rovers = 1600 each); Insurance $13000 (Trucks = $4420, Land-rover's = $2080 each).

TABLE 7: VEHICLE COST - BENEFIT: CARGO TRUCK, 10 TON
vehicobe (Values in US$)

A: BASIC CHARACTERISTICS

MAKE, SIZE:	1994 Cargo truck. 10 tons (10,000kg.), 6.25 m3 (i.e. 1.6:1 weight to volume ratio). Bed Size: 4.27m (14') * 2.75m (9') = 11.72m2 (126ft.2)		
CAPACITY USE	140 Hrs/mth	7 hrs/day	20 days/mth
ACTUAL USE	60 Hrs/mth	4 hrs/day	15 days/mth
% CAPACITY USE	43%		

B: COST - BENEFIT

	HRLY RENTAL	HOURS USED/MTH	VALUE US$ ANNUAL	MONTHLY	HOURLY
BENEFITS:BreakEven	36	60		2152	
COSTS	Hrly.rate@Cap.Use		25826	2152	15
NET BENEFIT				0	

C: COSTS

	US$	YEARS OF USE	ANNUALISED VALUE $
GRAND TOTAL			25826
OVERHEADS	10%		2348
TOTAL CAP+OPERAT.			23478
CAPITAL COSTS	72000	5	14400
Purchase Price	59000		
Spare Parts	5000		
Insurance	1000		
Shipping:toLuanda	7000		
Other			
OPERATING COSTS \1			9078
Petrol, oil etc			1258
Repair, maint.			3400
Insurance			4420
Other			

Sources: For capital costs - Relief & Development Services International Inc. Ottawa, Canada. For operating costs - A.Cain 5/94, as follows: Total annual operating costs for 2 trucks, 2 land-rovers apportioned among vehicles by purchase price of each vehicle as % of total fleet purchase price (Trucks = 34%, Land-rovers = 16% each of total fleet purchase price). Total and apportioned operating costs as follows: Total running costs (petrol, oil etc) $3700 (Trucks = $1258, Land-rovers = $592 each); Repair, maint. $10000 (trucks = $3400, Land-rovers = 1600 each); Insurance $13000 (Trucks = $4420, Land-rovers = $2080 each).

TABLE 8: VEHICLE COST - BENEFIT: DUMP TRUCK, 10 TON
vehicobe (Values in US$)

A: BASIC CHARACTERISTICS

MAKE, SIZE:	1994 Dump Truck. 10 tons (10,000kg.), 6.25 m3 (i.e. 1.6:1 weight to volume ratio). Bed Size:		
CAPACITY USE	140 Hrs/mth	7 hrs/day	20 days/mth
ACTUAL USE	60 Hrs/mth	4 hrs/day	15 days/mth
% CAPACITY USE	43%		

B: COST - BENEFIT

	HRLY RATE	HOURS USED/MTH	VALUE US$ ANNUAL	MONTHLY	HOURLY
BENEFITS:BreakEven	37	60		2207	
COSTS	Hrly.rate@Cap.Use		26486	2207	16
NET BENEFIT				0	

C: COSTS

	US$	YEARS OF USE	ANNUALISED VALUE $
GRAND TOTAL			26486
OVERHEADS	10%		2408
TOTAL CAP+OPERAT.			24078
CAPITAL COSTS	75000	5	15000
Purchase Price	62000		
Spare Parts	5000		
Insurance	1000		
Shipping:toLuanda	7000		
Other			
OPERATING COSTS			9078
Petrol, oil etc			1258
Repair, maint.			3400
Insurance			4420
Other			

Sources: For capital costs - Relief & Development Services International Inc. Ottawa, Canada. For operating costs - A.Cain 5/94, as follows: Total annual operating costs for 2 trucks, 2 land-rovers apportioned among vehicles by purchase price of each vehicle as % of total fleet purchase price (Trucks = 34%, Land-rovers = 16% each of total fleet purchase price). Total and apportioned operating costs as follows: Total running costs (petrol, oil etc) $3700 (Trucks = $1258, Land-rovers = $592 each); Repair, maint. $10000 (trucks = $3400, Land-rovers = 1600 each); Insurance $13000 (Trucks = $4420, Land-rovers = $2080 each).

TABLE 9: VEHICLE COST - BENEFIT: LAND-CRUISER/ LAND - ROVER
vehicobe (Values in US$)

A: BASIC CHARACTERISTICS

MAKE, SIZE:	1994 Toyota Land Cruiser 4WD, long wheel base. 7 - 9 seater including back area of 2 bench-seats, side-ways, folding seating 4 or cargo-space ? metres.		
CAPACITY USE	140 Hrs/mth	7 hrs/day	20 days/mth
ACTUAL USE	60 Hrs/mth	4 hrs/day	15 days/mth
% CAPACITY USE	43%		

B: COST - BENEFIT

	HRLY RATE	HOURS USED/MTH	VALUE US$ ANNUAL	MONTHLY	HOURLY
BENEFIT:BreakEven	18	60		1077	
COST	Hrly.rate@Cap.Use		12924	1077	8
NET BENEFIT				0	

C: COST

	US$	YEARS OF USE	ANNUALISED VALUE $
GRAND TOTAL			12924
OVERHEADS	10%		1175
TOTAL CAP+OPERAT.			11749
CAPITAL COSTS	37384	5	7476.8
Purchase Price \1	30000		
Spare Parts	3000		
Insurance	1000		
Shipping:toLuanda	3384		
Other			
OPERATING COSTS			4272
Petrol, oil etc			592
Repair, maint.			1600
Insurance			2080
Other			

1/ US$36000 to US$25200 depending on options and diesel/gas
Sources: For capital costs - Relief & Development Services International Inc. Ottawa, Canada. For operating costs - A.Cain 5/94, as follows: Total annual operating costs for 2 trucks, 2 land-rovers apportioned among vehicles by purchase price of each vehicle as % of total fleet purchase price (Trucks = 34%, Land-rovers = 16% each of total fleet purchase price). Total and apportioned operating costs as follows: Total running costs (petrol, oil etc) $3700 (Trucks = $1258, Land-rovers = $592 each); Repair, maint. $10000 (trucks = $3400, Land-rovers = 1600 each); Insurance $13000 (Trucks = $4420, Land-rovers = $2080 each).

TABLE 10: VEHICLE COST - BENEFIT: PICKUP TRUCK
vehicobe (Values in US$)

A: BASIC CHARACTERISTICS

MAKE, SIZE:	1994 Toyota Pick-up truck 4WD, long-wheel base. 1/2 ton with back-bed approx. 1.22m(4') * 2.44m(8') = 2.98m2 (32sq.ft.) * 0.46m(1'6")ht. incl. wheel wells		
CAPACITY USE	140 Hrs/mth	7 hrs/day	20 days/mth
ACTUAL USE	60 Hrs/mth	4 hrs/day	15 days/mth
% CAPACITY USE	43%		

B: COST - BENEFIT

	HRLY RATE	HOURS USED/MTH	VALUE US$ ANNUAL	MONTHLY	HOURLY
BENEFIT:BreakEven	17	60		1016	
COST	Hrly.rate@Cap.Use		12198	1016	7
NET BENEFIT				0	

C: EXPENDITURES

	US$	YEARS OF USE	ANNUALISED VALUE $
GRAND TOTAL			12198
OVERHEADS	10%		1109
TOTAL CAP+OPERAT.			11088.8
CAPITAL COSTS	34084	5	6816.8
Purchase Price \1	27000		
Spare Parts	2700		
Insurance	1000		
shipping:toLuanda	3384		
Other			
OPERATING COSTS			4272
Petrol, oil etc			592
Repair, maint.			1600
Insurance			2080
Other			

1/ US$36000 to US$25200 depending on options and diesel/gas
Sources: For capital costs - Relief & Development Services International Inc. Ottawa, Canada. For operating costs - A.Cain 5/94, as follows: Total annual operating costs for 2 trucks, 2 land-rovers apportioned among vehicles by purchase price of each vehicle as % of total fleet purchase price (Trucks = 34%, Land-rovers = 16% each of total fleet purchase price). Total and apportioned operating costs as follows: Total running costs (petrol, oil etc) $3700 (Trucks = $1258, Land-rovers = $592 each); Repair, maint. $10000 (trucks = $3400, Land-rovers = 1600 each); Insurance $13000 (Trucks = $4420, Land-rovers = $2080 each).

TABLE 11: BUILDING MATERIALS & TRANSPORT COSTS
2matrans

MATERIALS	UNIT COST@SOURCE NKZ '000 US$	LOADING-TRANSPORT-UNLOADING SOURCE TO WAREHOUSE/CACUACO HOURS	COST/HOUR	TOTAL COST/UNIT	WAREH/CAC TO SAMBIZANGA CONSTR. SITE HOURS	COST/HOUR	TOTAL COST/UNIT	SOURCE TO SITE. MAT+TRANSP TOTAL/UNIT
Cement:50kgbag	1200 10							
A:Rent 25TTruck	500 bags/trip	Total Transport+Labour:		0.37				14.38
Transport		1tripCost 100	100	0.20				using
Labour	Using DW labour as		34.72	0.17				rented
								truck &
B:UseDW10TTruck	200 bags/trip	Total Transp+Lab:	178.72	0.89				DW pickup
Transport		4 36	144	0.72				
Labour		Total labour:	34.72	0.17				
Superv/loadr	1 Activista	4 0.55	2.2					
Loaders	8 "	4 0.73	23.36					
Driver	1 "	4 2.29	9.16					
C:Pick-up.1/2T.	10 bags/trip				Total Transp+Lab:	40.04	4.00	14.90
Transport					2 17.00	34.00	3.40	using DW
Labour						6.04	0.60	truck &
Loaders	2 Loaders				2 0.73	1.46		pick-up
Driver	1 Driver				2 2.29	4.58		
Sand m3	750 6.25	Total Transp+Lab:	122.25	20.38	Total Transp+Lab:	79.21	13.20	39.83
DumpTruck 10T	6 m3/trip	3 37.00	111.00		2 37	74		using
Labour		Total Labour:	11.25		Total Labour:	5.21		Dump
Loaders	2 Loaders	3 0.73	4.38		2 0.73	2.92		Truck only
Driver	1 Driver	3 2.29	6.87		1 2.29	2.29		
					Total Transp+Lab:	41.5	27.67	54.29
Pick-up 1/2T	1.5 m3/trip				2 17	34	22.67	using
Labour						7.5	5.00	dump
Loaders	2				2 0.73	2.92		truck &
Driver	1				2 2.29	4.58		pickup
Gravel m3	2000 16.67	Total Transp+Lab:	122.25	20.38	Total Transp+Lab:	79.21	13.20	50.24
DumpTruck 10T	6 m3/trip	3 37.00	111.00		2 37	74		using
Labour		Total Labour:	11.25		Total Labour:	5.21		Dump
Loaders	2 Loaders	3 0.73	4.38		2 0.73	2.92		Truck only
Driver	1 Driver	3 2.29	6.87		1 2.29	2.29		
					Total Transp+Lab:	41.5	27.67	64.71
Pick-up 1/2T	1.5 m3/trip				2 17	34	22.67	using
Labour						7.5	5.00	dump
Loaders	2				2 0.73	2.92		truck &
Driver	1				2 2.29	4.58		pickup
Conc.Block:15cm	35 0.29							
CargoTruck 10T	300 blocks/tr	Total Transp+Lab:	178.72	0.60	Total Transp+Lab:	178.72	0.60	1.48
	1 CargoTruc	4 36	144	0.48	4 36	144.00	0.48	using
Labour		Total labour:	34.72	0.12	Total Labour:	34.72	0.12	cargo
Supervisor	1 Activista	4 0.55	2.2		4 0.55	2.20		truck
Loaders	8 "	4 0.73	23.36		4 0.73	23.36		only
Driver	1 "	4 2.29	9.16		4 2.29	9.16		
Roof Sheet,zinc								
3m*0.8m=2.4m2	3500 29.17							
2m*0.8m=1.6m2	2300 19.17							
CargoTruck 10T	30 sheets/tr	Total Transp+Lab:	79.5	2.65	Total Transp+Lab:	79.50	2.65	34.47
Transport		2 36	72	2.40	2 36	72.00	2.40	3m*0.08m
Labour		Total labour:	7.5	0.25	Total Labour:	7.50	0.25	24.47
Loaders	2	2 0.73	2.92		2 0.73	2.92		2m*0.08m
Driver	1	2 2.29	4.58		2 2.29	4.58		
Pipes 1'dia.1m.								
galv. iron	167 1.39							
polythelene	120 1.00							
Cargo Truck 10T	900 pipes/tru	Total Transp+Lab:	89.36	0.10	Total Transp+Lab:	89.36	0.10	1.59
Transport		2 36	72.00	0.08	2 36	72.00	0.08	g.iron
Labour		Total labour:	17.36	0.02	Total labour:	17.36	0.02	1.20
supervisor	1 Activista	2 0.55	1.10		2 0.55	1.10		polythel.
loaders	8 loaders	2 0.73	11.68		2 0.73	11.68		
driver	1 driver	2 2.29	4.58		2 2.29	4.58		
m.s.bars12mm,1m	67 0.56							
Cargo Truck 10T	900 bars/truc	Total Transp+Lab:	89.36	0.10	Total Transp+Lab:	89.36	0.10	0.76
Transport		2 36	72.00	0.08	2 36	72.00	0.08	
Labour		Total labour:	17.36	0.02	Total labour:	17.36	0.02	
supervisor	1 Activista	2 0.55	1.10		2 0.55	1.10		
loaders	8 loaders	2 0.73	11.68		2 0.73	11.68		
driver	1 driver	2 2.29	4.58		2 2.29	4.58		
Water. Litres	1 0.008	Commercially Trucked. Transport included in price						0.008

Exchange Rate: 120 NKZ:1US$
All monetary units in US$ unless noted as Kwanzas (NKZ). All NKZ's in '000's. For DW vehicles hourly rates see

tables 7 TO 10. For DW workers' hourly rates see table 6. Rental 25Ton Truck for Cement Transport Factory to Warehouse or Cacuaco = NKZ12mill (source:Cain/Saadi) Block types: All 20cm*40cm*varying thicknesses: cms & prices in NKZ'000's: 20 (NKZ45), 15 (NKZ35), 10 (NKZ30), 7 (NKZ28). Cargo Truck Flat bed, 4.27m*2.75m = 11.72m2 carrying 146 blocks per layer (11.72/0.08m2 block area) Pickup flat bed = 2.98m2 carrying 37 blocks per layer (2.98/0.08) Cargo Truck carrying 150 pipes of 6 m. lengths = 900 m length pipes Cargo Truck carrying 150 msbars of 6 m length = 900 m length bars. Concrete block transport by private trucks, Kikkollo to Cacuaco = NKZ5 - 10,000/ block = $0.08 (interview Martens da Silva, block manufacturer, Kikkollo.

TABLE 12: WATER STANDPOSTS, RESERVOIRS, AND PUMPS BUILT:
stpltr Jan. '92 - May '94

TYPE	OUTPUTS: Jan.'92 - June '94			- Dec. '95	
	Intended	Actual	% Change	Intended	Actual
Standposts: on existing network	15	21	40%		
Standposts: on new network	0	0	0%	30 likely less \1	
Reservoir	1	1	0%		
Pump Station	0	1	100%		

1/ Fewer standposts may be constructed as likely that water pressure less than anticipated
Source: A. Cain, D. Mitchell

TABLE 13: LATRINE SLABS PRODUCED:
stpltr Jan.1992 - May 1994

	PRODUCED IN STOCK		BROKEN IN TRANSIT	DISTRIB-UTED
Size A: 1.2M	327	103		
Size B: 0.6M	58	34		
TOTALS	385	137	20	228

Source: Hernani, 17.05.94

TABLE 14: LATRINES BUILT: Jan. '92 - May '94
stpltr

LATRINES	REFUGEE CAMPS	SCHOOLS	MARKETS	HOUSES		OTHER	TOTAL
				Activista	Private		
Built	87	21	2	24	46	40	220
TO Be Built			4	4			8
TOTALS	87	21	6	28	46	40	228

Source: Hernani, 17.05.94

TABLE 15: WATER STANDPOST: CONSTRUCTION COSTS & BENEFITS
stpconst
ANALYSIS DATE: 28.5.94.

A: BASIC CHARACTERISTICS

LOCATION	Ngola Keluanje. Near Project Sambizanga Field Office/ Health Centre				
STANDPOST TYPE	Ground level				
LAND-AREA USED (m2)	5.98	2.3 metres *	2.6 metres		
PIPE LENGTH (m)	10 metres from mains to standpost				
CAPACITY(ltrs/year) \1	2102400	480 ltrs/hour	12 hours/day	365 days/year	
ACTUAL OUTPUT(Ltrs/yr)	384000	480 ltrs/hour	8 hours/day	100 days/year	
% CAPACITY USE	18.26%				
HOUSEHOLDS SERVED	125 Households in neighbourhood				
COMMERCIAL WATER (NKZ)	1 NKZ in '000's. i.e. 1000 NKZ/litre commercial water rates				

B: COSTS (construction costs) - BENEFITS (litres water, NKZ & $ values of water)

	LITRES /YEAR	LITRES /HHLD/YR	NKZ/LTR ('000s)	$/LITRE	$/HHLD	$ TOTAL	/$100 Cost
BENEFITS	384000	3072	1.00	0.0083	25.6	3200.00	304.99
COSTS			0.33	0.0027	8.39	1049.21	100.00
NET BENEFITS: 1ST. YR.	384000	3072	0.67	0.0056	17.21	2150.79	204.99
NET BENEFITS:2ND.YR.ON (Less Maintenance Costs)	384000	3072	1.00	0.0083	25.6	3200.00	304.99

C: CONSTRUCTION COSTS

INPUTS	QUANTITIES		COSTS (NKZ in '000's, $) NKZ/UNIT At Source	$/UNIT	$/UNIT At Store	$ TOTAL	/$100 Cost
GRAND TOTAL	Total Cost of One Standpost:					1049.21	100.00
OVERHEADS	10%of Maters., Labour, Transp. Costs:					95.38	9.09
MATERS.+LABOUR+TRANSP.						953.82	90.91
MATERIALS \2						307.12	29.27
Water (Ltrs)	200		1	0.01	0.01	1.67	0.16
Sand (m3)	2		750	6.25	26.63	53.26	5.08
Gravel (m3)	0.2		2000	16.67	37.05	7.41	0.71
Cement (50kg bags)	7		1200	10.00	10.89	76.23	7.27
m.s. Bars:12mm dia (m)	1		67	0.56	0.66	0.66	0.06
Blocks:cm15*20*40(No.)	140		35	0.29	0.89	124.60	11.88
Pipes, g.i. 1"dia.(m)	12		167	1.39	1.49	17.88	1.70
Pipes,polyth.1"dia.(m)	10		120	1.00	1.10	11.00	1.05
Fittings	see notes		1730	14.42	14.42	14.42	1.37
	NO.	HOURS			$/HOUR		
MATERIALS TRANSPORT \3						144.00	13.72
10 Ton Cargo Truck, Store to Site	1	4			36	144.00	13.72
	NO.	PERS.DAYS			$/DAY		
LABOUR(Person Days) \4	7					304.70	29.04
Technician 1	1	1			180.3	180.30	17.18
Technician 2	1	2			20.8	41.60	3.96
Mason	1	6			8.7	52.20	4.98
Mason's Assistant	2	6			5.1	30.60	2.92
Channel Diggers	2	1	Free Community Volunteers			0.00	0.00
	NO.	HOURS					
LABOUR TRANSPORT \3						198.00	18.87
Land-rover Pickup	1	6			17	102.00	9.72
Driver	1	6			16	96.00	9.15

FOREIGN EXCHANGE RATE: $ 1.00 = 120 NKZ
1/ LITRES PER MINUTE: 8
2/ For materials' costs see table 11
3/ For materials' transport costs see Table 11. For vehicle use costs see tables 7 to 10
4/ For labour costs see table 6

TABLE 16: WATER STANDPOST: ANNUAL MAINTENANCE PATTERNS & COSTS
stpmaint

REPAIR & MAINT (In $)	MONTHS = 1	2	3	4	5	6	7	8	9	10	11	12	ANNUAL TOTAL	% OF TOTAL
ATTENDENT											TOTAL SALARY		924.00	70.14
WaterMonitor\1	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	77.00	924.00	70.14
EQUIPMENT											TOTAL EQUIPMENT:		220.00	16.70
Tools: for simple repairs	100.00												100.00	7.59
CleaningEquipm	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	120.00	9.11
REPAIR & MAINT											TOTAL REPAIR,MNT		173.36	13.16
1.Replace Tap												18.72	18.72	1.42
2.ReplaceGrill												41.36	41.36	3.14
3.Replaster						17.50							17.50	1.33
4.Valve Cover						23.58							23.58	1.79
5.Fossa Cover						23.35							23.35	1.77
6.Clear Drain				16.28				16.28				16.28	48.85	3.71
TOTALS	187.00	87.00	87.00	103.28	87.00	151.44	87.00	103.28	87.00	87.00	87.00	163.36	1317.36	100.00

FOREIGN EXCHANGE1 $ = 120 NKZ ALL NKZ'S IN 1000'S
1/ Assumes same salary as coomunity worker/ Activista. See Table Labour Costs

A: DETAILS OF REPAIR & MAINTENANCE COSTS

1: REPLACE TAP	NKZ'000'	$
TOTALS	2246	18.72
Tap	365	3.04
Teflon Tape	50	0.42
Pipe Wrench	1	0.01
Brush	1	0.01
Labour	29	0.24
Transport	1800	15.00

2: REPLACE GRILL	NKZ'000'	$
TOTALS	3085	41.36
Grill	3000	25.00
Cem:25kg	43	0.36
Snd:0.3m	20	0.17
Water:20	20	0.17
Hammer	1	0.01
Trowel	1	0.01
Float	1	0.01
Shovel	1	0.01
MortarBo	1	0.01
Labour	75	0.63
Transpor	1800	15.00

3: REPLASTERING	NKZ'000'	$
TOTALS	222	17.50
Snd:0.5m	34	0.28
Cem:50kg	85	0.71
Watr:100	100	0.83
Shovel	1	0.01
MortarBo	1	0.01
Trowel	1	0.01
Level	1	0.01
Clamps	1	0.01
FormBoar	1	0.01
Float	1	0.01
Labour	75	0.63
Transpor	1800	15.00

4:VALVE COVER	NKZ'000'	$
TOTALS	2830	23.58
Cover	1000	8.33
Hammer	1	0.01
Labour	29	0.24
Transpor	1800	15.00

5:FOSSA COVER	NKZ'000'	$
TOTALS	2825	23.35
Cover	1000	8.33
Hammer	1	0.01
Labour	1	0.01
Transpor	1800	15.00

6:CLEAR DRAIN	NKZ'000'	$
TOTALS	1954	16.28
Rebar:	125	1.04
12mm,5m		0.00
Labour	29	0.24
Transport	1800	15.00

B: COST ASSUMPTIONS FOR REPAIR & MAINTENANCE

1: LABOUR	NKZ/MTH	NKZ/HOUR	$/HOUR
Skilled	2000	14.29	0.12
Semiskilled	1500	10.71	0.09
Unskilled	100	0.71	0.01

2: TOOLS/USE, RENTALS	NKZ/DAY	$/DAY
	1	0.01

3: TRANSPORT: Cacuaco-NgolaKeluanje	K'metres	NKZ/KM	$/KM	NKZTOTAL
	12	150	1.25	1800

Source: Dan Mitchell

TABLE 17: WATER STANDPOST: CONSTRUCTION AND MAINTENANCE COSTS & BENEFITS:
stpcnmn5 FIRST 5 YEARS: WATER @ US$ 0.0083 /LITRE

A: COSTS	YEARS =) 1	2	3	4	5	TOTAL	% OF TOTALCOST
CONSTRUCTION \1	1049.21					1049.21	13.74
MAINTENANCE \2							
Monitor'sSalary	924.00	924.00	924.00	924.00	924.00	4620.00	60.50
Equipment	220.00	220.00	220.00	220.00	220.00	1100.00	14.41
Repair, Maint.	173.36	173.36	173.36	173.36	173.36	866.80	11.35
TOTAL COSTS	2366.57	1317.36	1317.36	1317.36	1317.36	7636.01	100.00
B: BENEFITS							
Water (Ltrs) \3	384000	384000	384000	384000	384000	1920000	
Water ($ Values)	3200.00	3200.00	3200.00	3200.00	3200.00	16000	209.53
C:NET BENEFITS($)	833.43	1882.64	1882.64	1882.64	1882.64	8363.99	109.53

Analysis Date: 28.5.94. All NKZ values in '000'S
Foreign Exchange: $1 = 120 NKZ
Standpost Water: Piece rates, by the bucket: 1 NK 0.0083 $/litre
Commercial Water: Piece rates, by the bucket: 1 NK 0.0083 $/litre
Bulk rates, to fill large tanks: 0.29 NK 0.0024 $/litre
14000 litre tank filled = NKZ 4 mill., 286/ltr. (invw. with house tank owner)
1/ For construction costs & benefits analysis, see Table 15
2/ For maintenance analysis see Table 16
3/ For water output assumptions and calculations see Table 15
Detailed analysis should anticipate and adjust for such factors as variations in water output, water pricing, salary increases, inflation etc.

TABLE 18: WATER STANDPOST: MAINTENANCE COSTS & BENEFITS: FIRST 5 YEARS:
stpcnmn5 WATER @ US$ 0.0018 /LITRE

A: COSTS	YEARS =) 1	2	3	4	5	TOTAL	% OF TOTALCOST
CONSTRUCTION \1	0.00					0.00	0.00
MAINTENANCE \2							
Monitor'sSalary	300.00	300.00	300.00	300.00	300.00	1500.00	43.27
Equipment	220.00	220.00	220.00	220.00	220.00	1100.00	31.73
Repair, Maint.	173.36	173.36	173.36	173.36	173.36	866.80	25.00
TOTAL COSTS	693.36	693.36	693.36	693.36	693.36	3466.80	100.00
B: BENEFITS							
Water (Ltrs) \3	384000	384000	384000	384000	384000	1920000	
Water ($ Values)	704.00	704.00	704.00	704.00	704.00	3520	101.53
C:NET BENEFITS($)	10.64	10.64	10.64	10.64	10.64	53.20	1.53

Analysis Date: 28.5.94. All NKZ values in '000'S
Foreign Exchange: $1 = 120 NKZ
Standpost Water: Piece rates, by the bucket: 0.22 NK 0.0018 $/litre
Commercial Water: Piece rates, by the bucket: 1 NK 0.0083 $/litre
Bulk rates, to fill large tanks: 0.29 NK 0.0024 $/litre
14000 litre tank filled = NKZ 4 mill., 286/ltr. (invw. with house tank owner)
1/ For construction costs & benefits analysis, see Table 15
2/ For maintenance analysis see Table 16
3/ For water output assumptions and calculations see Table 15
Detailed analysis should anticipate and adjust for such factors as variations in water output, water pricing, salary increases, inflation etc.

TABLE 19: DRY PIT LATRINE & BATH ROOM: CONSTRUCTION COSTS & BENEFITS
latrcobe

A: BASIC CHARACTERISTICS

SPECIFICATIONS:	Dry, single-pit latrine & wash room. Pit:concrete block lined, 1.2 dia x 3m deep. Room: concrete block walls, zinc sheet roof, 1.5m*1.9m*2.3m high. Soak-pit: sand and gravel, 0.8 dia.*0.8 deep
LOCATION: \1	Public Market
CAPACITY: \2	14600 Visits/Yr 40 PersonYrs 365 Visits/Year/Person
	40 Visits/Day fills pit in 1 year
ACTUAL USE:	? (below assumes used to capacity to fill pit in one year)
USER FEES:	2 NKZ in 1000's

A: COSTS - BENEFITS

	VISITS /YEAR	NKZ $ /VISIT\3 VISIT		$ TOTAL /YEAR	$/$100 COST
BENEFITS \3	14600	2.00	0.02	243.33	34.04
CONSTRUCTION COSTS	Break Even Charge:	5.88	0.05	714.93	100.00
NET BENEFITS (not incl. maintenance)		-3.88	-0.03	-471.60	-65.96

C: CONSTRUCTION COSTS \4

INPUTS	QUANTITIES	COSTS/UNIT:NKZ in '000's, $ AT SOURCE NKZ \5	$	AT STORE $ \5	TOTAL $ /$100 COST $	$
GRAND TOTAL		Total Cost of 1 Latrine:			714.93	100.00
OVERHEADS \6		10%of Matr.Lab.Transp			64.99	9.09
MATERS+LABOUR+TRANSP.					649.94	90.91
MATERIALS					391.37	54.74
Water (Litres)	400.00	1.00	0.008	0.008	3.33	0.47
Sand (m3)	0.30	750.00	6.25	26.63	7.99	1.12
Gravel:forSoakpit(m3)	0.50	2000.00	16.67	37.05	18.53	2.59
Cement (50kgBags)	3.00	1200.00	10.00	10.89	32.67	4.57
Blocks:cm7*20*40(No.)	280.00	35.00	0.29	0.89	249.20	34.86
RoofSheet,2m*0.8m (No.)	3.00	2300.00	19.17	21.82	65.46	9.16
Latrine Slab & Cover	1.00	652.00	5.43	5.43	5.43	0.76
VentPipe:polyth. 5cm(m)	3.00	120.00	1.00	1.10	3.30	0.46
DrainPipe:g.i.,5cm.(m)	2.00	167.00	1.39	1.49	2.98	0.42
Cramp(clamp?)Iron (No)	9.00	33.00	0.28	0.28	2.48	0.35
	NO. HOURS			$/HOUR		
MATERIALS TRANSPORT \7					144.00	20.14
10 Ton Cargo Truck: Store to Site	1 4			36.00	144.00	20.14
	NO. PERS.DAYS			$/DAY		
LABOUR (Person Days)	3				56.70	7.93
Mason	1 3.00			8.70	26.10	3.65
Assistant	2 3.00			5.10	30.60	4.28
	No. HOURS			$/HOUR		
LABOUR TRANSPORT \8					57.87	8.09
Landrover Pickup	1 3			17.00	51.00	7.13
Driver	1 3			2.29	6.87	0.96

FOREIGN EXCHANGE: $1: 120 NKZ (in 1000's)

1/ Most latrines constructed in houses and schools. Public market example used here to include 'Benefits' analysis since user fee charged

2/ Source: A. Cain

3/ NKZ 2000/visit charged by NGO Daemus in Roque Senteiro market. Reported by NGO Daemus representative, weekly planning meeting 7.5.94.

4/ For materials' and transport costs see Table 11, for labour costs see Table 6, for vehicle costs see Tables 6 to 10

5/ 'At Source' means at point of extraction or production & does not include transport. 'At Store' means at warehouse or Cacuaco workshop storage and includes transport costs to that point.

6/ Includes costs such as for program & technology design, management supervision, capital equipment (e.g. cement mixers, tools) etc.

7/ Assumes 2 trips carrying all materials from store to construction site

8/ Assumes 1 trip/day using pickup for 1 hour per trip for workers & supervision visit

9/ Latrine activista Sandra cites them (2 skilled, 2 unskilled workers) taking 2, 6 hour days to construct one latrine.

TABLE 20: LATRINE CONSTRUCTION & MAINTENANCE, COSTS & BENEFITS:
latrcnmn FIRST FIVE YEARS: USER-FEES 0.02 $/VISIT

A: COSTS	YEARS =) 1	2	3	4	5	TOTAL	% OF TOTALCOST
CONSTRUCTION \1	714.93					714.93	11.11
MAINTENANCE \2							
Attendent'sSalary \3	924.00	924.00	924.00	924.00	924.00	4620.00	71.80
Equipment \4	170.00	170.00	170.00	170.00	170.00	850.00	13.21
Repair, Maintenance	50.00	50.00	50.00	50.00	50.00	250.00	3.89
TOTAL COSTS	1858.93	1144.00	1144.00	1144.00	1144.00	6434.93	100.00
B: BENEFITS							
Visits/Year \5	14600	14600	14600	14600	14600	73000	
User Fees/Year ($)\6	243.33	243.33	243.33	243.33	243.33	1217	18.91
C:NET BENEFITS($):	-1615.60	-900.67	-900.67	-900.67	-900.67	-5218.26	-81.09
ACUMMULATIVE:	-1615.59	-2516.26	-3416.93	-4317.59	-5218.26	-5218.26	

Foreign Exchange: $1 = 120 NKZ (in 1000's)
User Fees/Visit: .2 NKZ/Visit 0.0167 $/Visit
1/ For construction costs & benefits analysis, see Table 19
2/ For example of maintenance analysis as applied to community water stand post, see Table 16
3/ Salary $77/mth. equivalent to Activista, community worker's salary
4/ Assumes Equipment for simple repairs = $50/year, cleaning equipment = $10/mth.
5/ Assumes toilet capacity = 50 person years = 14600 visits/year for one pit to fill in one year. For calculations see Table 18
6/ Fees charged by NGO Daemus for latrine in Roque Senteiro market = NKZ 2000/visit
Detailed analysis of all above should anticipate and adjust for such factors as variations in water output, water pricing, salary increases, inflation etc.
Analysis Date: 28.5.94. All NKZ values in '000'S

TABLE 21: LATRINE CONSTRUCTION & MAINTENANCE, COSTS & BENEFITS:
latrcnmn FIRST FIVE YEARS: USER-FEES 0.09 $/VISIT

A: COSTS	YEARS =) 1	2	3	4	5	TOTAL	% OF TOTALCOST
CONSTRUCTION \1	714.93					714.93	11.11
MAINTENANCE \2							
Attendent'sSalary \3	924.00	924.00	924.00	924.00	924.00	4620.00	71.80
Equipment \4	170.00	170.00	170.00	170.00	170.00	850.00	13.21
Repair, Maintenance	50.00	50.00	50.00	50.00	50.00	250.00	3.89
TOTAL COSTS	1858.93	1144.00	1144.00	1144.00	1144.00	6434.93	100.00
B: BENEFITS							
Visits/Year \5	14600	14600	14600	14600	14600	73000	
User Fees/Year ($)\6	1338.33	1338.33	1338.33	1338.33	1338.33	6692	103.99
C:NET BENEFITS($):	-520.60	194.33	194.33	194.33	194.33	256.74	3.99
ACUMMULATIVE:	-520.60	-326.26	-131.93	62.40	256.74	256.74	

Foreign Exchange: $1 = 120 NKZ (in 1000's)
User Fees/Visit: 11 NKZ/Visit 0.0917 $/Visit
1/ For construction costs & benefits analysis, see Table 19
2/ For example of maintenance analysis as applied to community water stand post, see Table 16
3/ Salary $77/mth. equivalent to Activista, community worker's salary
4/ Assumes Equipment for simple repairs = $50/year, cleaning equipment = $10/mth.
5/ Assumes toilet capacity = 50 person years = 14600 visits/year for one pit to fill in one year. For calculations see Table 18
6/ Fees charged by NGO Daemus for latrine in Roque Senteiro market = NKZ 2000/visit
Detailed analysis of all above should anticipate and adjust for such factors as variations in water output, water pricing, salary increases, inflation etc.
Analysis Date: 28.5.94. All NKZ values in '000'S

TABLE 22: LATRINE CONSTRUCTION & MAINTENANCE, COSTS & BENEFITS:
latrcnmn FIRST FIVE YEARS: USER-FEES 0.06 $/VISIT
RECOVERY OF REDUCED CONSTRUCTION & MAINTENANCE COSTS

A: COSTS	YEARS =) 1	2	3	4	5	TOTAL	% OF TOTALCOST
CONSTRUCTION \1	350.00					350.00	11.86
MAINTENANCE \2							
Attendent'sSalary \3	300.00	300.00	300.00	300.00	300.00	1500.00	50.85
Equipment \4	170.00	170.00	170.00	170.00	170.00	850.00	28.81
Repair, Maintenance	50.00	50.00	50.00	50.00	50.00	250.00	8.47
TOTAL COSTS	870.00	520.00	520.00	520.00	520.00	2950.00	100.00
B: BENEFITS							
Visits/Year \5	14600	14600	14600	14600	14600	73000	
User Fees/Year ($)\6	876.00	876.00	876.00	876.00	876.00	4380	148.47
C:NET BENEFITS($):	6.00	356.00	356.00	356.00	356.00	1430.00	48.47
ACUMMULATIVE:	6.00	362.00	718.00	1074.00	1430.00	1430.00	

Foreign Exchange: $1 = 120 NKZ (in 1000's)
User Fees/Visit: 7.2 NKZ/Visit 0.0600 $/Visit
1/ For construction costs & benefits analysis, see Table 19
2/ For example of maintenance analysis as applied to community water stand post, see Table 16
3/ Salary $77/mth. equivalent to Activista, community worker's salary
4/ Assumes Equipment for simple repairs = $50/year, cleaning equipment = $10/mth.
5/ Assumes toilet capacity = 50 person years = 14600 visits/year for one pit to fill in one year. For calculations see Table 18
6/ Fees charged by NGO Daemus for latrine in Roque Senteiro market = NKZ 2000/visit
Detailed analysis of all above should anticipate and adjust for such factors as variations in water output, water pricing, salary increases, inflation etc.
Analysis Date: 28.5.94. All NKZ values in '000'S

TABLE 23: LATRINE CONSTRUCTION & MAINTENANCE, COSTS & BENEFITS:
latrcnmn FIRST FIVE YEARS: USER-FEES 0.04 $/VISIT
RECOVERY OF ONLY REDUCED MAINTENANCE COSTS

A: COSTS	YEARS =) 1	2	3	4	5	TOTAL	% OF TOTALCOST
CONSTRUCTION \1	0.00					0.00	0.00
MAINTENANCE \2							
Attendent'sSalary \3	300.00	300.00	300.00	300.00	300.00	1500.00	57.69
Equipment \4	170.00	170.00	170.00	170.00	170.00	850.00	32.69
Repair, Maintenance	50.00	50.00	50.00	50.00	50.00	250.00	9.62
TOTAL COSTS	520.00	520.00	520.00	520.00	520.00	2600.00	100.00
B: BENEFITS							
Visits/Year \5	14600	14600	14600	14600	14600	73000	
User Fees/Year ($)\6	520.73	520.73	520.73	520.73	520.73	2604	100.14
C:NET BENEFITS($):	0.73	0.73	0.73	0.73	0.73	3.67	0.14
ACUMMULATIVE:	0.73	1.47	2.20	2.93	3.67	3.67	

Foreign Exchange: $1 = 120 NKZ (in 1000's)
User Fees/Visit: 4.28 NKZ/Visit 0.0357 $/Visit
1/ For construction costs & benefits analysis, see Table 19
2/ For example of maintenance analysis as applied to community water stand post, see Table 16
3/ Salary $77/mth. equivalent to Activista, community worker's salary
4/ Assumes Equipment for simple repairs = $50/year, cleaning equipment = $10/mth.
5/ Assumes toilet capacity = 50 person years = 14600 visits/year for one pit to fill in one year. For calculations see Table 18
6/ Fees charged by NGO Daemus for latrine in Roque Senteiro market = NKZ 2000/visit
Detailed analysis of all above should anticipate and adjust for such factors as variations in water output, water pricing, salary increases, inflation etc.
Analysis Date: 28.5.94. All NKZ values in '000'S

TABLE 24: LATRINE-SLAB PRODUCTION UNIT: COST - BENEFIT ANALYSIS
ltrslab

NOTE: FIGURES BELOW ARE NOTIONAL AND INCOMPLETE, AND INCLUDED ONLY TO ILLUSTRATE METHODOLOGY

A: BASIC CHARACTERISTICS

Three person production unit for dry pit latrine slab & cover. Slab dimensions: 'X' diameters * 'Y' thickness.

CAPACITY:(Slabs/mth)	60	3	slabs/7hr	20 days/mth	12 mths/year
OUTPUT:(Slabs/mth)	16	1	slabs/7hr	16 days/mth	10 mths/year
% CAPACITY USE:	27%				

B: COSTS- BENEFITS

	OUTPUT SLABS/MTH	NKZ /SLAB	$ /SLAB	TOTAL $ /MTH	/YEAR	$/$100 COST
BENEFITS	16					0.00
COSTS			58.57	937.08	9370.78	100.00
NET BENEFITS			-58.57	-937.08	-9370.78	-100.00

C: COSTS

INPUTS	QUANTITIES		COSTS (NKZ in 1000's) NKZ/UNIT At Source	$/UNIT	$/UNIT At Store	TOTAL /MTH	/YEAR	$/$100 COST
GRAND TOTAL						937.08	9370.78	100.00
OVERHEADS	10%of Maters.,Labour,Transp., Costs:					85.19	851.89	9.09
CAP+MAT+LAB+TRANSP:						851.89	8518.89	90.91
	QTYS.	YRS.OFUSE						
CAPITAL						118.17	1418.10	15.13
Land (m2, mthly.rent)	50					50.00	600.00	6.40
Bldings(m2,Constr.cost)	25	25	240000	2000		6.67	80.00	0.85
Utilities:electr.etc						50.00	600.00	6.40
Equipment(Depreciation)		7	60000	500		5.95	71.43	0.76
Tools (Depreciation)		3	24000	200		5.56	66.67	0.71
	QTYS/SLAB?							
MATERIALS						4.00	48.00	0.51
Water (litres)	30		1	0.01	0.01	4.00	48.00	0.51
Sand (m3)			750	6.25	26.63	0.00	0.00	0.00
Gravel (m3)			2000	16.67	37.05	0.00	0.00	0.00
Cement (50kg.bags)			1200	10.00	10.89	0.00	0.00	0.00
ms Bars, 12mm dia. (m)			67	0.56	0.66	0.00	0.00	0.00
Other?								
	NO.	HOURS	$/HOUR					
MATERIALS TRANSPORT	[none if materials' costs incl. transp. to Cac							
10TonCargoTruck carrying 1 mths. supply	1	8	36.00			288	3456.00	36.88
	NO.	PERS.DAYS	$/DAY					
LABOUR (PersonDays)						290.86	3490.29	37.25
Supervisor/Technician2?	1	0.04	20.80			14.86	178.29	1.90
Mason	1	1.00	8.70			174.00	2088.00	22.28
Assistant	2	1.00	5.10			102.00	1224.00	13.06
	DAYS		$/DAY					
LABOUR TRANSPORT	(None if labour live onsite or arrange own)					150.86	1810.29	19.32
Pickup	1	0.29	17			77.71	932.57	9.95
Driver	1	0.29	16			73.14	877.71	9.37

Foreign Exchange: $1 = 120 NKZ
Supervisor checks: 15 mins/day
Pickup used: 2 hours/day to pickup and drop labour
All quantities are notional and need accurate estimates
For materials and transport costs, see Table 11, for labour costs, see Table 6, for vehicle costs see Tables 7 to 10.

TABLE 25: HOUSEHOLD ECONOMIC PROFILE: HOUSEHOLD CHARACTERISTICS, ASSETS,
hhldaiex INCOMES, & EXPENDITURE

A: BASIC CHARACTERISTICS	DESCRIPTION			
HOUSEHOLD LOCATION:				
WHEN ARRIVED:				
NO. OF MEMBERS:		ADULTS:	EARNERS:	MALES:

B: ASSETS	DESCRIPTION			
B1:LAND & HOUSE:				
LAND AREA:		COMPOUND:	BUILTAREA:	NO.ofROOMS:
BUILDING MATERIALS:		FLOOR:	WALL:	ROOF:
RIGHTS TO LAND:				
SERVICES:		LATRINE:	WATER:	OTHER:
B2:EARNING USES ON LAND: SHOP, WORKSHOP, KITCHEN GRADEN ETC:				
B3:TOOLS, EQUIPM. UTENSILS, ETC:				
B4: ANIMALS:				
B5: SAVINGS,IN KIND			IN CASH:	
B5: OTHER?				

C: INCOMES	DESCRIPTION	EARNED	
		NKZ	$
TOTALS:			
SOURCE 1:			
SOURCE 2:			
SOURCE 3:			

D: EXPENDITURES	DESCRIPTION	QUANTITY.VALUE	
		NKZ	$
TOTALS:			
LAND & HOUSE			
FOOD			
WATER			
OTHER SERVICES			
CLOTHING			
TRANSPORT			
OTHER			

E: TOTALS: INCOMES - EXPENDITURES:	DESCRIPTION	VALUE	
		NKZ	$
INCOMES:			
EXPENDITURES:			
NET INCOMES:			

NOTE: THIS IS A PRELIMINARY DRAFT ILLUSTRATING SOME OF THE BASICS REQUIRED FOR DATA COLLECTION AND ANALYSIS OF A HOUSEHOLD ECONOMIC PROFILE

TABLE 26 Consultations by speciality and by professional category in the health centres of Sambizanga and Ngola Kiluange 1992.

	Doctors		Nurses	
Specialities	Sambizanga	Ngola Kiluange	Sambizanga	Ngola Kiluange
Medicine	476	575	8832	2812
Pediatrics	781	622	6434	2975
Gynacology	279	0	10365	6648
Obstetrics	748	0	0	0
Puericultura	0	0	11336	5468
Family planning	0	0	3479	10
Total	2284	1197	40446	17913

TABLE 27 Consultations by speciality and by professional category in the health centres of Sambizanga and Ngola Kiluange 1993.

	Doctors		Nurses	
Specialities	Sambizanga	Ngola Kiluange	Sambizanga	Ngola Kiluange
Medicine	1292	382	8542	3190
Pediatrics	1688	213	5498	3385
Gynacology	341	42	0	0
Obstetrics	0	27	10382	7597
Puericultura	0	0	15184	11642
Family planning	0	0	3475	440
Total	3321	664	43081	26254

TABLE 28 Vaccinations at the Health Centres of Sambizanga and Ngola KIluange, 1992 and 1993 (rates per 100,000 population)

	Ngola KIluange		Sambizanga	
	1992	1993	1992	1993
January	2080	3668	1315	620
February	1957	3253	1062	895
March	2717	2696	1179	1124
April	0	3155	1344	1116
May	463	1620	632	1368
June	2408	2362	1420	1250
July	2490	4885	1096	1100
August	2806	3548	1290	1366
September	2085	4544	1560	1655
October	2754	5376	1006	1769
November	2341	3228	686	2059
December	3421	2688	892	1429
Total	25522	41023	13482	15751

TABLE 29 Consultations by speciality in the health centres of Sambizanga and Ngola Kiluange 1992.

Specialities	Sambizanga Consulations	Sambizanga Consult. rates per 100,000	Ngola Kiluange Consulations	Ngola Kiluange Consult. rates per 100,000
Medicine	9308	3103	3387	2823
Pediatrics	7215	2405	3597	2998
Gynacology	748	249	0	0
Obstetrics	10644	3548	6648	5540
Puericultura	11336	3779	5468	4557
Family planning	3479	1160	10	8
Total	42730	14244	19110	15926

TABLE 30 Vaccinations at the Health Centres of Sambizanga and Ngola KIluange, 1992 and 1993.

	Ngola KIluange 1992	Ngola KIluange 1993	Sambizanga 1992	Sambizanga 1993
January	2496	4401	3945	1860
February	2348	3904	3185	2685
March	3260	3235	3538	3372
April	0	3786	4031	3347
May	555	1944	1895	4104
June	2890	2834	4259	3749
July	2988	5862	3289	3301
August	3367	4258	3869	4098
September	2502	5453	4679	4966
October	3305	6451	3018	5306
November	2809	3874	2059	6178
December	4105	3225	2676	4286
Total	30625	49227	40443	47252

PHOTOGRAPHS

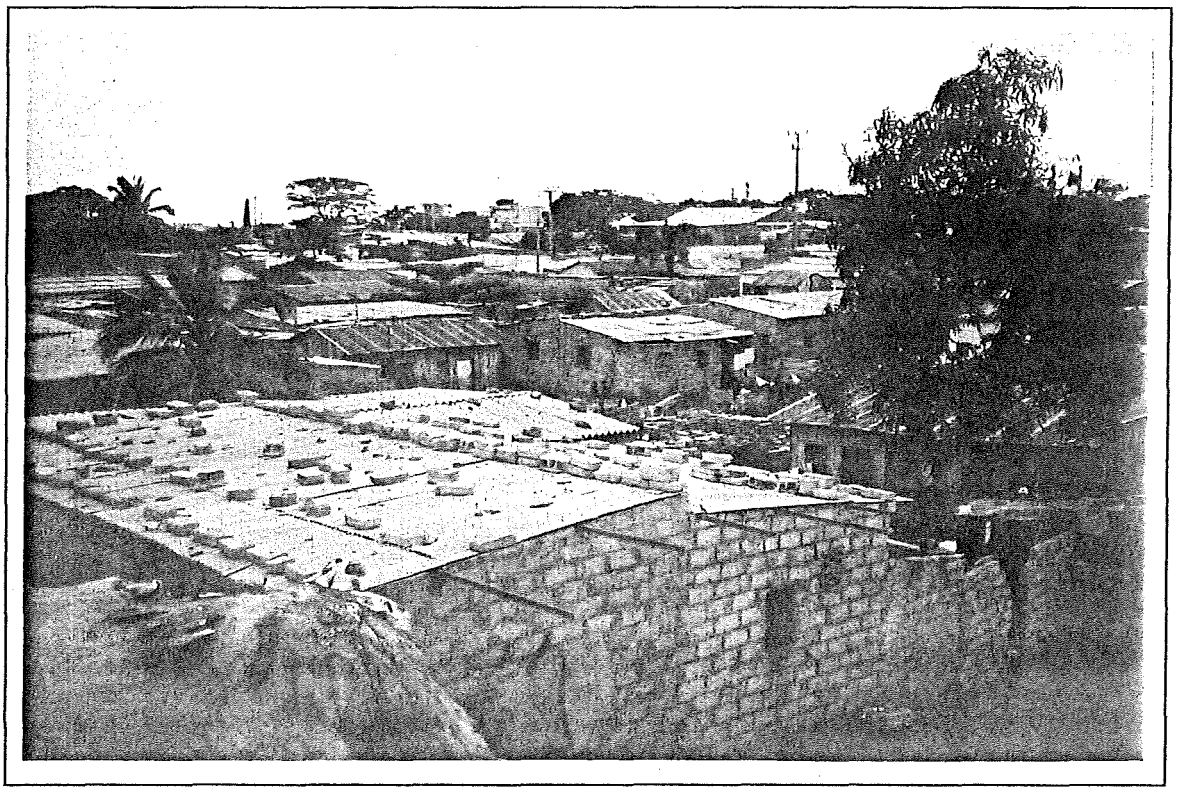


Plate 1: Sambizanga project area: The municipality's rapidly expanding long-time resident and new refugee population lacks basic facilities and jobs.

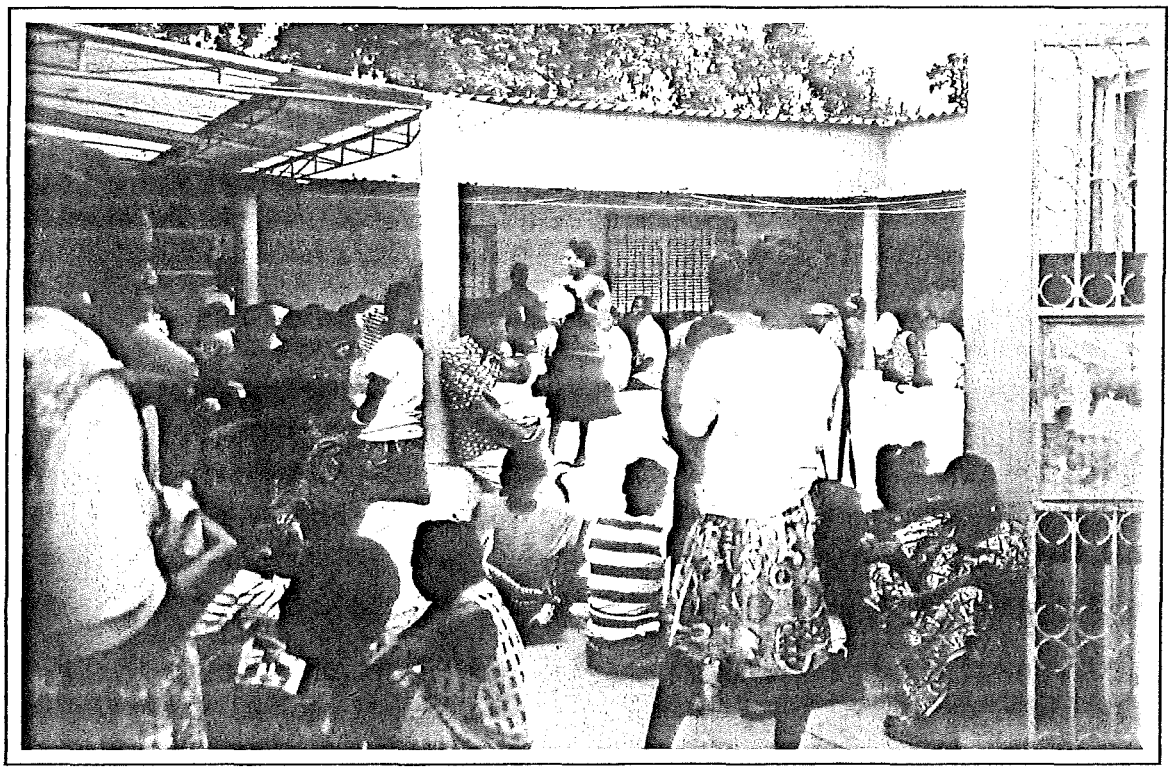


Plate 2: Public Health Education: Project development worker (Activista) lectures on preventive health to patients at Project Health Centre.

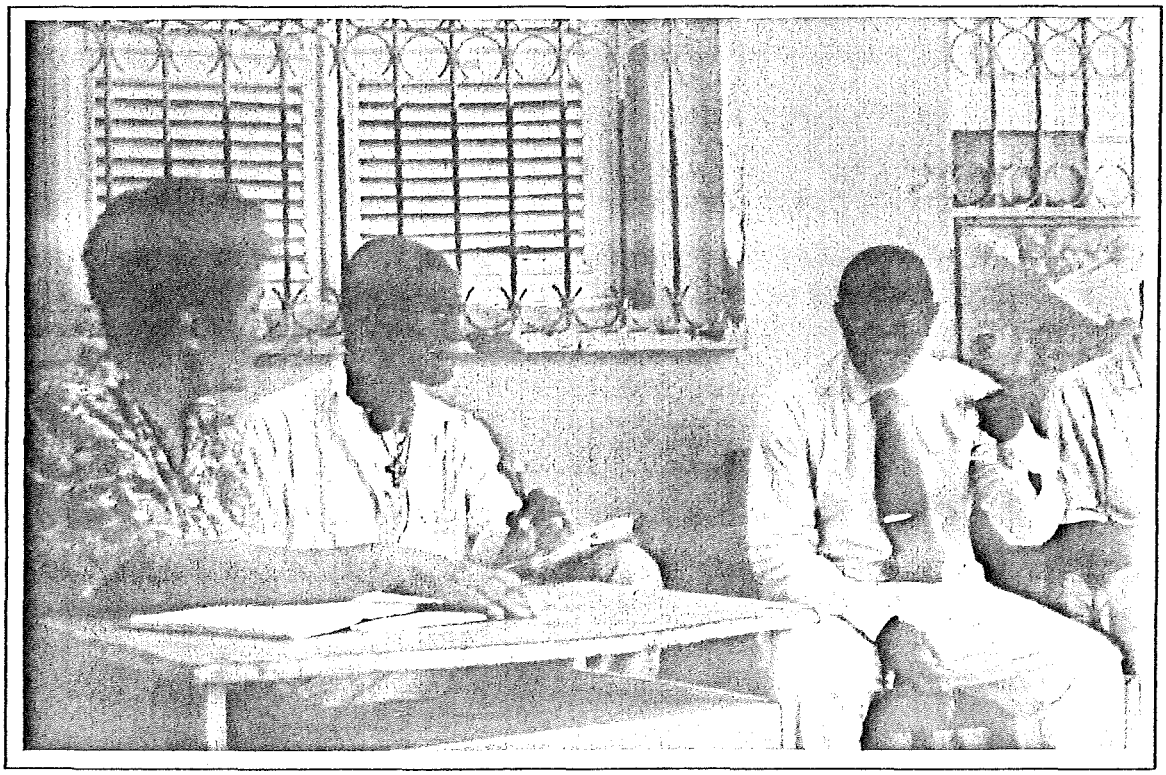


Plate 3: Weekly Project Public Meeting: Project reviews activities with community and local-government representatives.

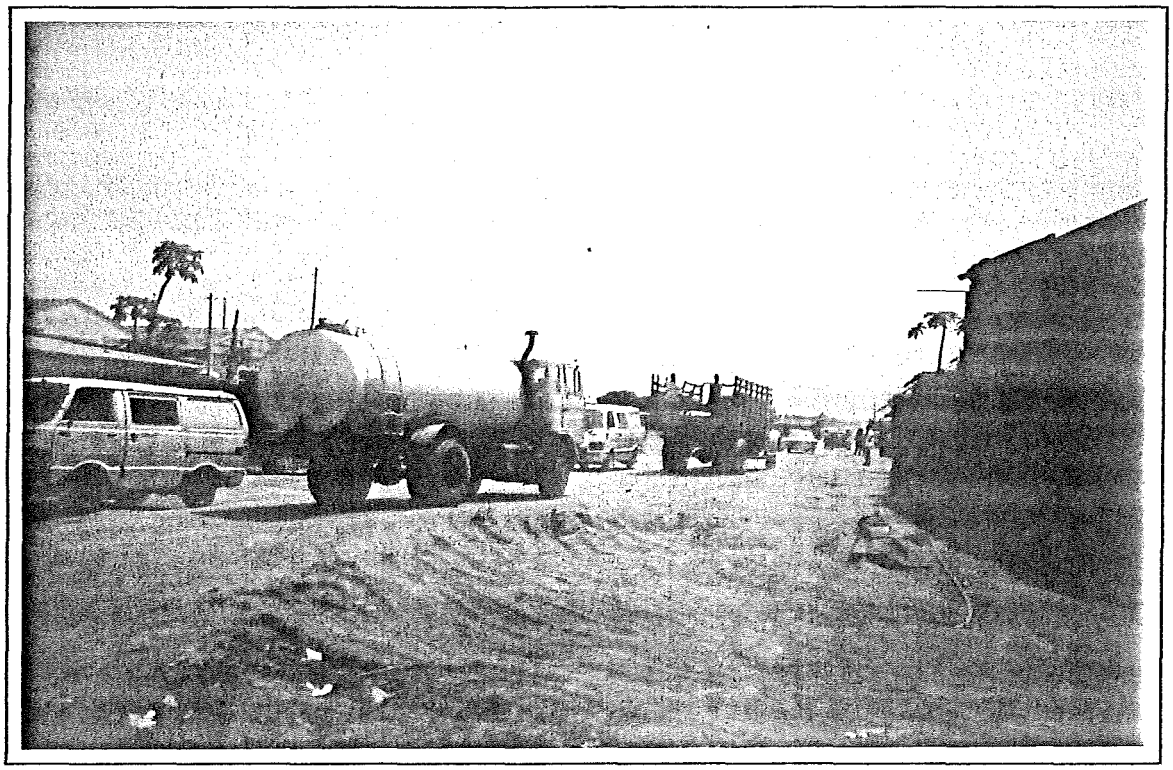


Plate 4: Water Commercially-Supplied: Residents pay exorbitant rates for often untreated river water trucked-in commercial tankers.

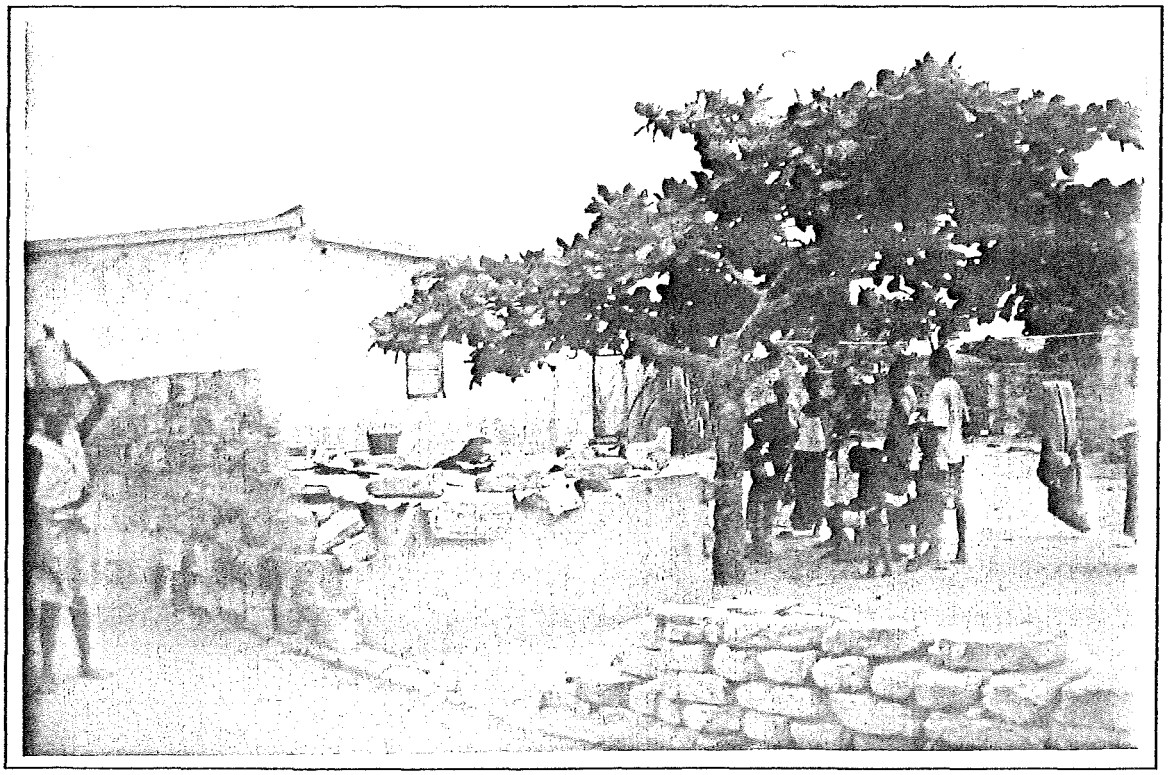


Plate 5: Tankers sell water to households with large storage tanks, who then sell to others by the bucket.

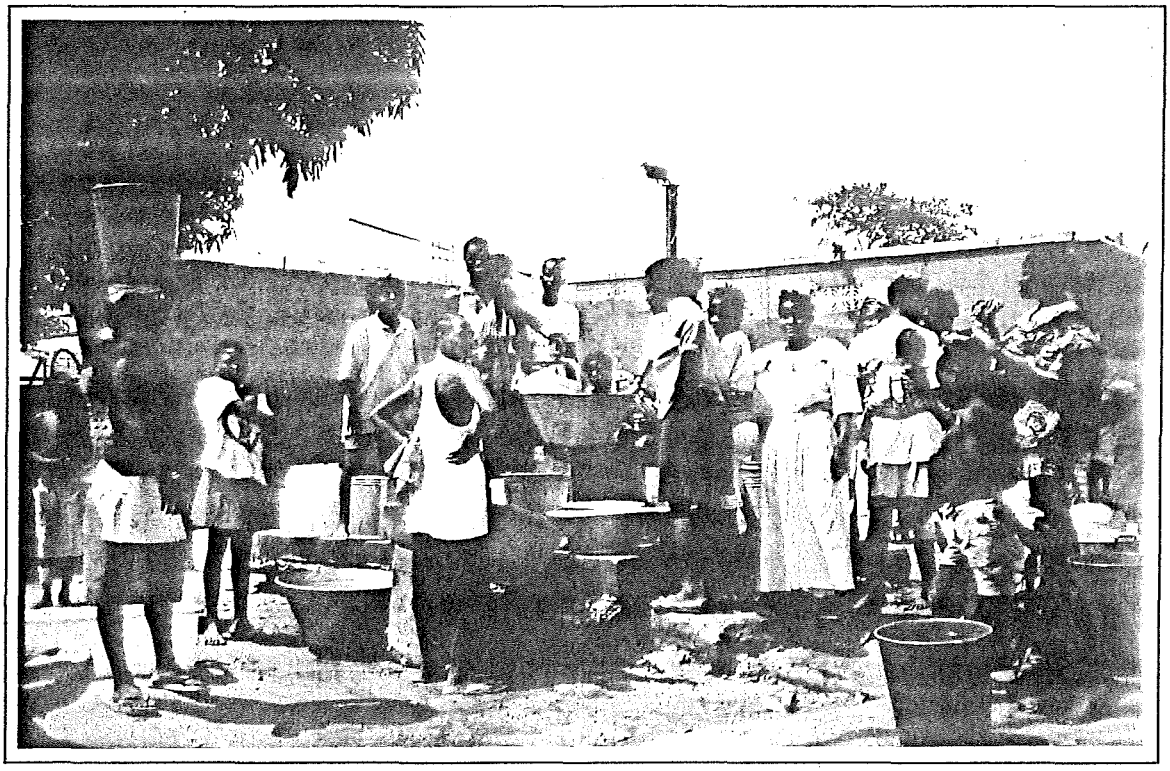


Plate 6: Community Standposts: Standposts are widely needed although very few still function due to low pressure and lack of maintenance.

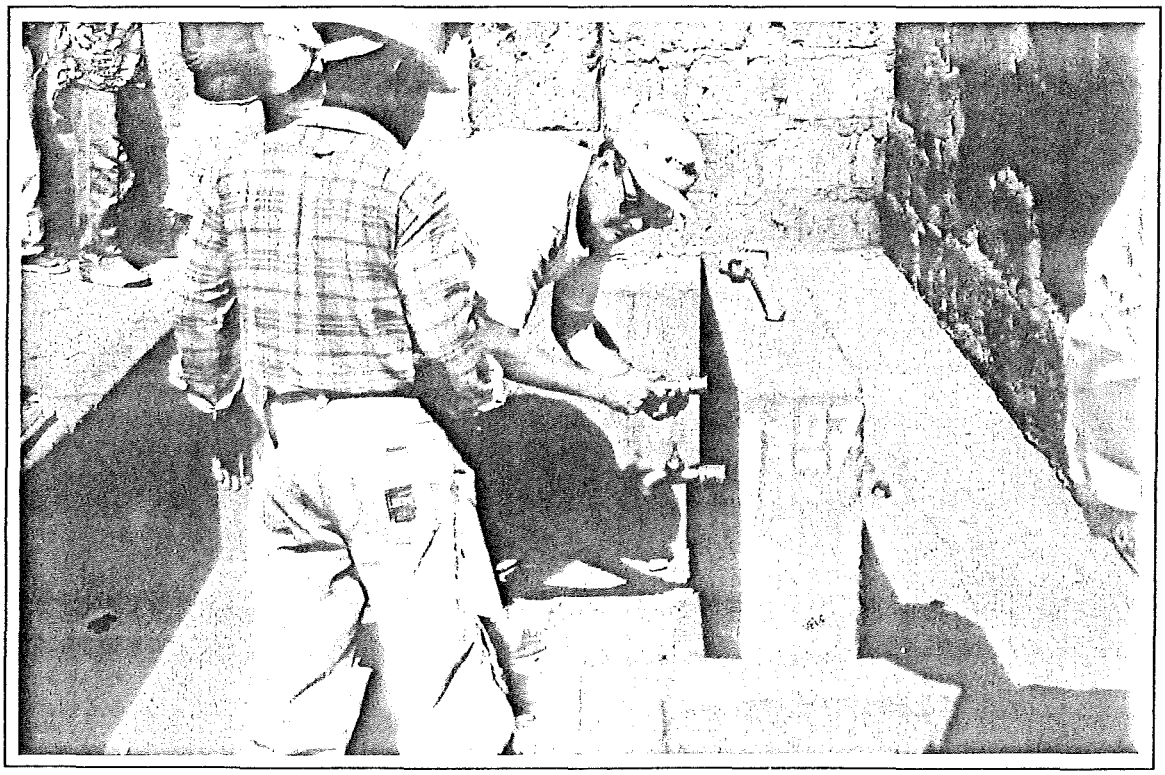


Plate 7: The Project has completed 21 standposts with 30 more to come using existing pressure and water reservoirs. It is developing a community-based maintenance and cost-recovery system.

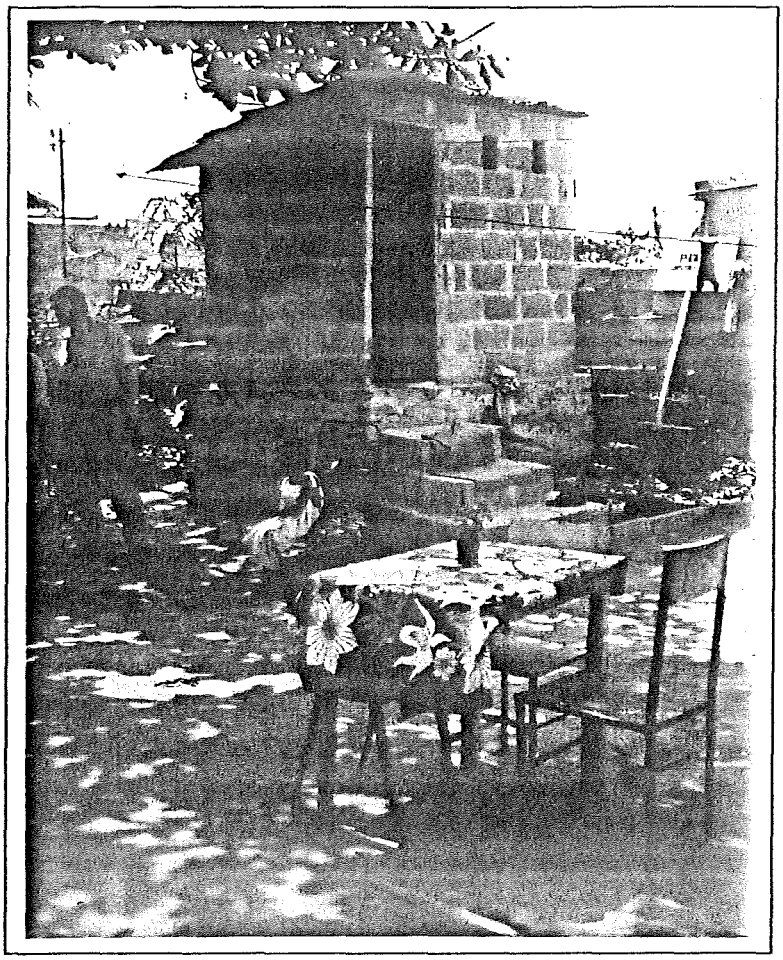


Plate 8: Latrine Construction and Production: Lack of latrines is a major health hazard. Two hundred and twenty latrines have been constructed in houses, schools, markets, and refugee camps.

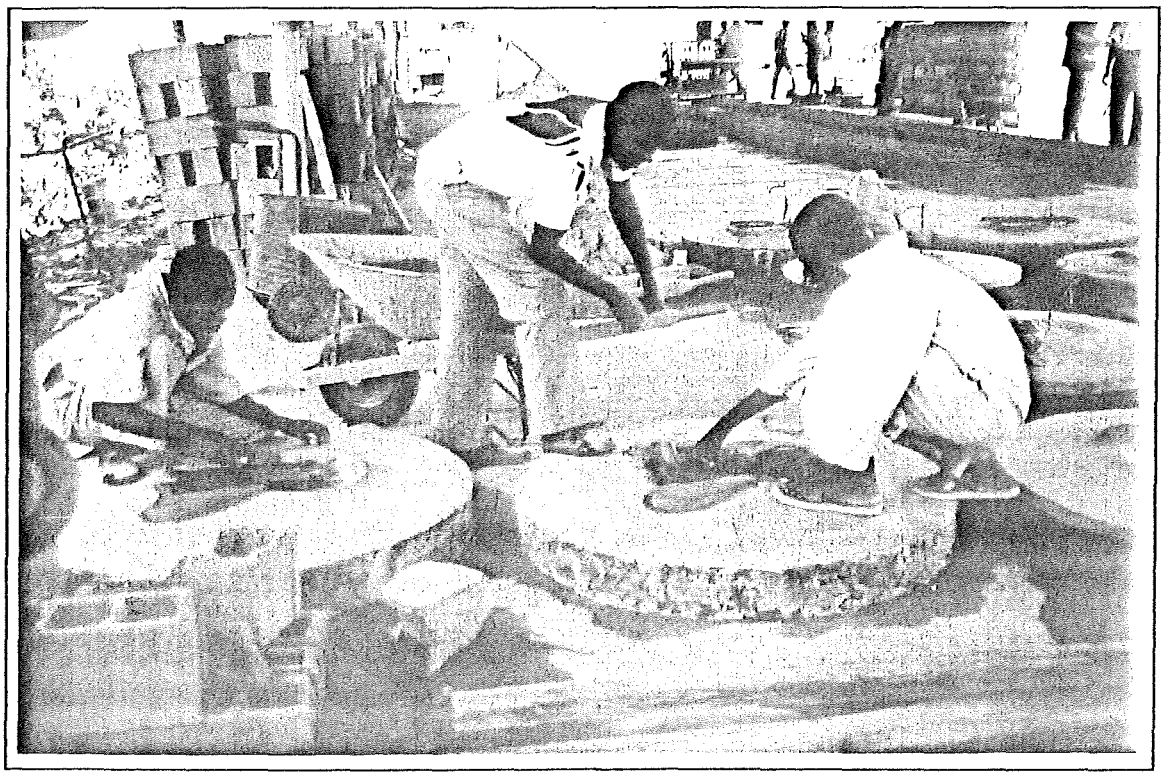


Plate 9: A local industry in latrine-slab production is being developed with 385 slabs produced so far.

Plate 10: Members of Project Sambizanga. Innovative, low-cost roofing experiment in background.