health-sanitation-water

Hesawa



# COST ANALYSIS OF HESAWA PROGRAMME'S ACTIVITIES

Zonal HESAWA Coordination Office
P. O. BOX 604
MWANZA

November, 1995

## Table of Contents

# EXECUTIVE SUMMARY.

This report which is based on field/site visits and interviews with implementors focuses on cost analyses of various activities being undertaken by the Programme.

Major activities include physical implementation i.e shallow wells'construction,rainwater harvesting facilities' construction, i.e tanks and water jars,institutional and household latrines'construction and improvement of traditional water sources. Others are Human Resources Development and logistical support.

Cost analyses of activities in the Programme area is the undertaking which ought to be continuos. It aims at establishment of quantities, costs and standardization.Thus, facilitating easy planning, budgeting , control,monitoring and evaluation.

Standard costs (donor funded and local funded items) for major physical products currently being implemented by the Programme are summarised in table no.1. and some standard designs are appended at the end of this report.

In the course of undertaking the cost analyses, it was observed that the current financial reports from the districts level do not clearly show the costs of capital investment in equipment and tools that goes direct to the final products. The same with running costs of vehicles.

Inadequacy of baseline data as well as established/adopted quantifiable impact indicators made the cost effectiveness analysis almost impossible.
An attempt of cost effectiveness analysis of shallow wells' construction was carried out using the established costs of four wells from four districts.

In view of the aforementioned bottlenecks, it is hereby recommended that:

- The Programme Management ought to establish quantifiable impact indicators so as to facilitate easy cost effective analysis of several interventions being undertaken by the Programme. There should be a wide properly documented baseline data on all aspects of Programme prior to starting of any intervention.
- Privatization of some activities regarding the construction of shallow well should be undertaken. Surveying of sites, digging of wells and casting of rings are among the activities to start with.
- With an assistance from the Financial Advisors to Districts, districts should be able to produce financial reports with adequate details to determine the capital costs and vehicles' running costs related to a particular activity or final product.

## 1.0 COST ANALYSES OF PHYSICAL INTERVENTIONS.

The objective of the undertaking was to establish the total costs involved in construction of the interventions ,running of vehicles,i.e consumption of fuel and spares,running of human resources development activities and come out with standard costs.

Standard costs facilitate uniformity in planning, budgeting,control costs and motivating and measuring efficiencies in the Programme.

Standard costs promote possible cost reduction.

Table 1. **Standard costs of major physical products within the Programme.**

| Description | Unit cost '000 TSh. | Donor funded costs | % donor funded costs |
|---|---|---|---|
| **Ring well, 10 meters' deep with Nira AF85** | 1,366' | 1,104' | 81 |
| **Rainwater harvesting facilities:** | | | |
| -46 cubic meters | 2,445' | 2,230' | 91 |
| -23 cubic meters | 1,610' | 1,445' | 90 |
| -10 cubic meters | 1,076' | 637' | 59 |
| - 4 cubic meters*1 | 283' | 148' | 52 |
| **Improved traditional water sources:** | | | |
| -rockwell with windlass | 284' | 244' | 86 |
| -spring box | 158' | 118' | 75 |
| **Institutional latrine** | | | |
| -2 stances | 331' | 311' | 94 |
| **Household latrine** | | | |
| -single VIP | 105' | 42' | 40 |
| -Double vault VIP | 132' | 56' | 42 |

*1 Construction of this tank is on experiment.

Note: The above standard unit costs include : direct materials, direct labour and overheads costs.

## 1.1 Cost analysis of shallow wells'onstruction.

Construction of four shallow wells were closely followed in Bukoba (R), Tarime, Musoma(R) and Kwimba districts.The objective of an undertaking was to establish the total costs involved.

In all cases, the costings were carried out according to stages of implementation , starting with surveying of sites, digging wells, casting of rings and cover/stand, setting of rings and backfilling, hardcore and slab/apron construction and installation of pumps.

Data were obtained from sites, ring factories, stores and through interviews with the surveyors, wellsinkers, storekeepers, ring factories' workers, shallow well construction incharges and District Water Engineers.

Cost items were naturally grouped into categories as direct materials, direct labour and overheads costs.

*Direct materials*

These refer to all materials that form an integral part of the completed product and that can be included directly in calculating the cost of the well.The ease and feasibility with which the materials items can be traced to the final product are major considerations in their designation as direct materials. In this aspect direct materials included:

(i) Donor-funded items:
- Pump and its accessories.
- Cement.
- Reinforcement bars.
- Vegetable oil.

(ii) Locally funded items:
- Stones.
- Sand.
- Aggregates.

*Direct labour:*

This is labour expended directly upon the materials comprising the final product. The cost of wages (salaries and allowances)paid to skilled or/and unskilled/ casual labourers alike that can be assigned to the particular unit produced is termed direct labour.Self-help labour was treated as casual labour.

*Overhead costs.*

These are cost of indirect materials, indirect labour and other production costs that cannot conveniently be charged directly to specific unit,activity or product. These costs were determined by computing 50% against the sum of direct materials, direct labour costs.

Purchase and transport costs, production bonus, supervision, monitoring costs ,consultancy costs and capital costs for equipment and tools are among the items covered under this category.

Number of population:

The number of people being served by the wells were obtained from the Village Executive Officers and District Promotion advisors.

**Established costs of shallow wells are presented in appendices as follows:**

Appendix 8 shallow well constructed in Bukoba(R)
Appendix 9 shallow well constructed in Tarime,
Appendix 10 shallow well constructed in Musoma(R)
Appendix 11 shallow well constructed in Kwimba.
Appendix 12 Standard costs of a 10m. deep well.

## 2.0 COST EFFECTIVENESS OF THE PROGRAMME'S INVESTMENTS.

Cost efficiency is one of the guiding principles while implementing the Programme's activities. It aims at costs reduction, increasing implementation capacities and effective utilisation of capital assets.

The HESAWA Programme is to a very large extent a human and social oriented, rather than a technicaal development programme, thus, returns or gains on the investment take long to be realised and in most cases these returns are not quantifiable.

### 2.01 Human Resources Development

The ultimate goal for HRD is to improve skills and expand capacities of implementation and support personnel particularly those operating at village level. HRD is the cornerstone in all Programme's activities.

Improved skills and gained knowledge can be seen as impact indicators ofthe investment in HRD which may be susceptible to anlysis of the basis of cost effectiveness. But,since these are not quantifiable returns, it is only possible to assess cost effectivenes on the basis of analysis of the number of people trained and relative costs of training. But it should be noted that such analysis does not take into account the quality of the training received and the real benefits gained.

### 2.02 Running of vehicles.

This is one of the major cost items in the Programme. It supports the physical implementation of various interventions, HRD as well as monitoring and supervision of activities.

**Allocation of vehicles and motorcycles to districts**

While allocating the logistical facilities to districts the Programme Management is guided by the adopted Transport Guidelines. This procedure does not take into account the available implementation capacities and volume of interventions.This has resulted into underutilization of the facilities by some districts.

**Analysis of effective utilization of vehicles.**

With the current system of financial reporting from the district level, there is no sufficient details to identify which part of the running costs that could be related to any particular activity of physical outputs or HRD activities.

In the absence of adequate financial information it is only possible to rate the efficiency of vehicles' utilization by comparing the running costs against the volume or value of physical output and compare them from district to district.

In view of this situation, the Programme Management should work out annual physical targets as a precondition of allocating vehicles. Any district failing to qualify for allocation of the vehicle,the need for transport should
be taken care of by private sector,i.e by hiring.

**2.03 Analysis of cost effectiveness of shallow wells' construction.**

On the basis of established costs per well it is possible to compare them from district to district .

<u>Comparative costs of shallow wells.</u>

Average costs per well on a district by district basis were as follows:
.Tarime: Ring well at a cost of TZS 891,878/=
.Musoma(R):Ring well at a cost of TZS 982,275/=
.Bukoba(R):Hand drilled well at a cost of TZS 1,080,090/=
.Kwimba: Ring well at a cost of TZS 1,161,525/=

Average costs per meter for each well are as shown in the table:

Table 2 Costs per meter

| District | Total costs (TZS) | Depth meter(s) | costs per meter |
|---|---|---|---|
| Tarime | 891,878 | 16.3 | 54,716 |
| Musoma (R) | 982,275 | 6.5 | 151,119 |
| Bukoba (R) | 1,080,090 | 12.0 | 90,008 |
| Kwimba | 1,161,525 | 8.0 | 145,190 |

From the table we may conclude that, wells constructed in Kwimba and Musoma (R) districts are dearer compared to the one constructed in Tarime district.

However, such conclusion would not reflect the real situation for number of reasons.

First, the shallow wells' costs will vary from district to district depending on the type of pumps installed.In this case the pump installed in Tarime district was SWN 80, whereas in other districts pumps were Nira 85.

Second, the costs will vary depending on labourforce, i.e the number of skilled and unskilled personnel involved in performing certain activities. Hired labour/contracted or communal participation.

Third, variancies may arise from availability of local materials and their prices.

Fourth, costs will vary depending on whether the well was hand augured, or hand dug.

Table 3. <u>Comparison costs by items:</u>

| District | Type of well/depth | Type of pump | Pump mtrl (TZS) | Labour (TZS) | Other mtrl | |
|---|---|---|---|---|---|---|
| | | | | | D-funded (TZS) | Local (TZS) |
| Tarime | Han dug/16.3 metres | SWN-80 | 362270 | 87580 | 108885 | 35850 |
| Musoma (R) | Hand dug/6.5 metres | NIRA AF-85 | 339745 | 54200 | 160905 | 100000 |
| Bukoba (R) | Hand augured /12.0 metres | NIRA AF-85 | 427890 | 148440 | 113730* | 30000 |
| Kwimba | Hand dug/8.0 metres | NIRA AF-85 | 357595 | 185545 | 173910 | 72500 |

* Includes the cost of casings.

From the table the following conclusions can be made:

<u>Pump materials and accessories:</u>

- SWN-80 pump material is cheaper compared to pump materials cost of Nira AF-85.
- Pump materials cost for NIRA AF-85 varies according to the depth of the well.
- Therefore, pump materials cost is a variable item, hence actual cost of pump material will always depend on type of pump, type of risers and rods and depth of well.

Labour cost:

- Labour cost depends on the composition of the labourforce taking part in a certain activity i.e. number of skilled technicians and number of unskilled/casual labourers.

- Labour cost depends on the organization of the executing certain activities. For example in Tarime and Musoma(R) districts, digging the wells and slab construction activities were contracted to individuals compared to Bukoba(R) and Kwimba districts, where the same activities were implemented on self help basis/community participation. The cost man-days was computed using the prevailing rate of `opportunity cost `. In this case a minimum wage per month was used.

Other materials cost:

**Donor funded items**

These include cement for rings, cover/stand and slab/apron; vegetable oils for ring casting and reinforcement bars for ring and cover casting. These costs will vary depending on the number of rings used.

Local materials
These include sand, stones and aggregates meant for ring, cover/stand and slab construction.
The costs of these materials will vary depending on their availability in a specific locality/district. In case of sand and aggregates, costs will vary according to the quantities used for casting rings.

Table 4. Comparison of investment per capita:

| District | Pop. served | Investment/ person (foreign input) TZS | Investment/ person (Local input) TZS |
|---|---|---|---|
| Tarime | 300 | 2,561 | 411 |
| Musoma (R) | 300 | 2,760 | 514 |
| Bukoba (R) | 400 | 2,254 | 446 |
| Kwimba | 120 | 7,719 | 2,150 |

From the table we may conclude that a well constructed in Bukoba(R) is serving 400 people at a cost of TZS 2,254/= of foreign input and TZS 446/= of local input, whereas a well in Kwimba is serving 120 people at a cost of TZS 7,719/= foreign input and TZS 2,150/= of local input. Hence, a well constructed in Bukoba (R) is more cost effective compared to the one constructed in Kwimba.

## 2.04 Cost Reduction

Cost reduction is one of the means for enhancing the cost efficiency in the Programme. This can be carried out by either reducing direct costs, i.e labour and materials, overheads, substituting direct materials or changing technologies.

Todate, the Programme Management has already approved funds for manufacturing roofing tiles made of cement and burnt bricks to replace the galvanised iron sheets and cement bricks respectively for institutional latrines' construction.

There is also a proposal of manufacturing of gutters from cement which may further considerably reduce the overall costs of both institutional latrines and rainwater harvesting facilities' construction.

Specifically for household rainwater harvesting tanks, cost escalation of materials may have a negative effect on contributions from the beneficiaries. In order to ensure the project is sustainable and affordable , the Programme Management want to introduce two(2) different small tanks of 2000 and 4000 litres capacities. In both cases, the BRC mesh, which is not available in local markets is not used as one of the direct materials,it is substituted by the weldmesh.

For example,for a 4000 litres' capacity tank the beneficiary will have to contribute TZS 65,000/= as a 55% of donor funded items compared to the current rate of TZS 340,000/=. We, think this is affordable as well as sustainable, hence recommended for its adoption and implementation by the Programme.

## 3.0 PROBLEMS:

<u>Major problems encountered :</u>

* Lack of quantitive goals/ impact indicators pertaining to both physicalinterventios and Human resources development activities made the cost effectiveness analysis difficult. Also,adequate baseline data were missing.

* Costs of assets used in the production/construction of physical products were not known,thus establishment of capital costs to be included in the final products were impossible.

## 4.0 RECOMMENDATIONS:

In view of the pointed out bottlenecks, it is hereby recommended that:

* It is necessary to identify the costs of any particular intervention and establish the value of the returns to be gained. These figures must be out alongside comparable

figures, from either inside or outside the Programme area. Comparable figures may be quoted from the National policies on specific subjects or from other Programmes in the country or neigbhouring countries having the same objectives/goals e.g Danida,Finnida RUWASA etc.

* There should be a wide properly documented baseline data on all aspects of Programme interventions. Hence,aneed for collecting and document all socio-economical and cultural baseline data in all villages with interventions as well as villages planned to be phased-in for future monitoring and evaluation.

* Inventories of assets should be established so as facilitate easy establishment of capital cost. The cost which could only be distributed equally to products at the end of a specified evaluation period.

* Costing follow-up of installations in the Programme area should be a continuous exercise as always there are changes in technologies that may influence changes in standard costs.

As a matter of sustainability,beneficiaries should be kept aware of the costs involved and from the very beginning should understand the financial implications of the undertaking in question.

* Reliable water points/sources constructed under the HESAWA Programme should adhere to the National Water Policy specifically with regard to distance between them,i.e 400 meters and the population to be served, i.e 250 people.

* Privatization of some activities regarding the construction of shallow well should be undertaken. Surveying of sites, digging of wells and casting of rings are among the activities to start with.

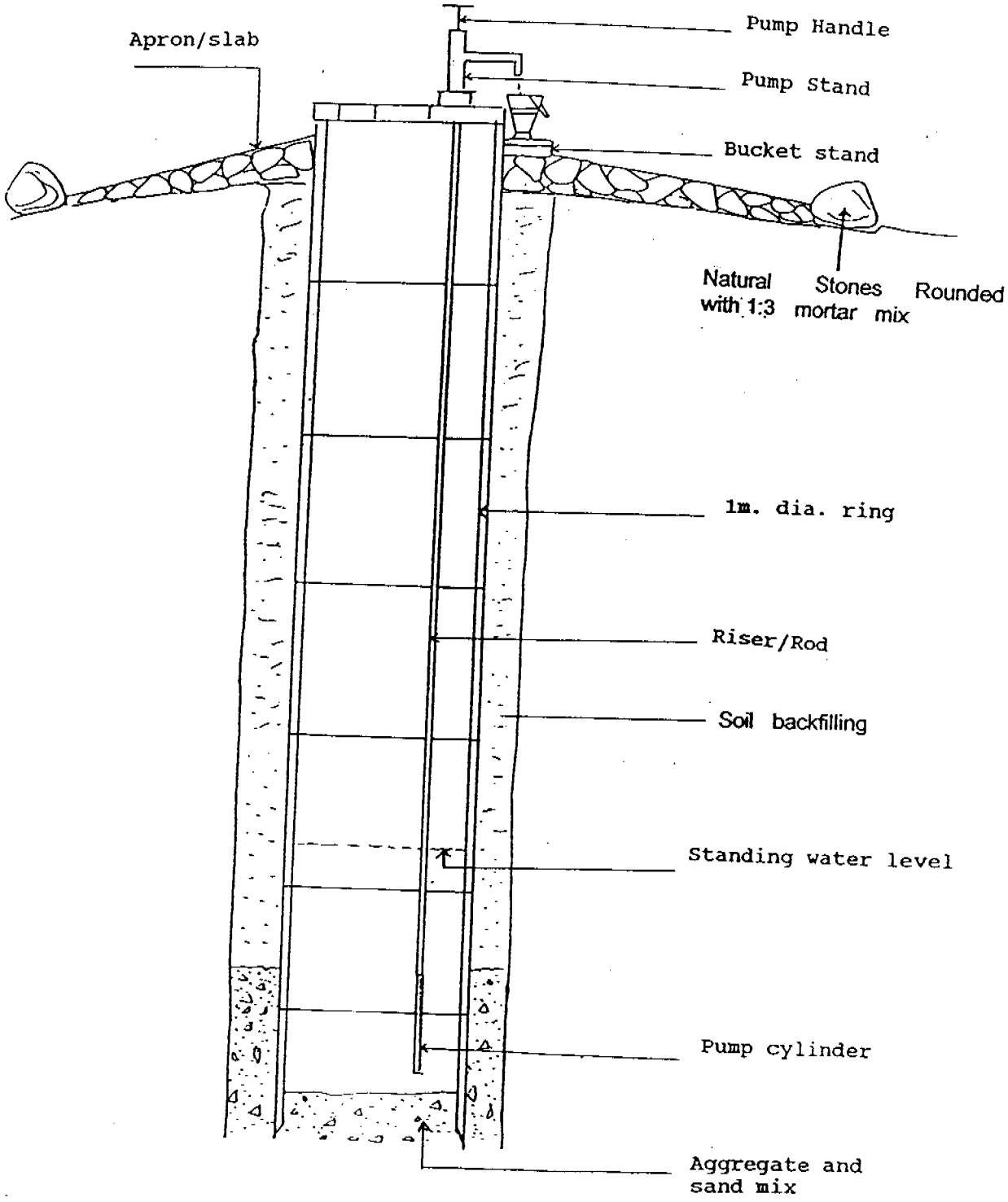
* The Programme should work out specific annual targets of some physical interventions from which districts should be gauged prior to allocation of transport facilities. Therefore, vehicles especially lorries should be withdrawn from those districts with low rate of physical implementation.The need of transport should be taken care of by the private sector, i.e by hiring.

* More emphasis on technological innovations involving locally available materials should be encouraged.

# 5.0 APPENDICES

STANDARD DESIGN

OF A 10 METRE DEEP RING WELL



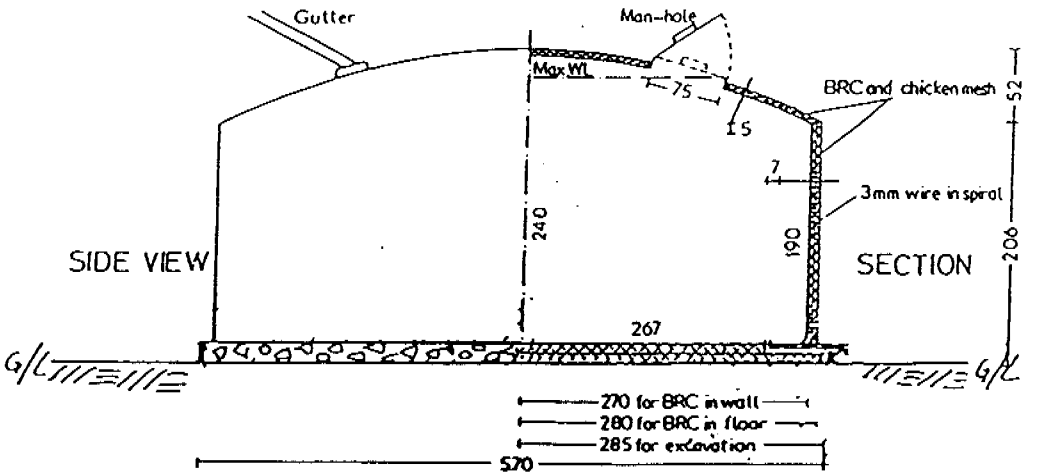

## Standard cost: '000

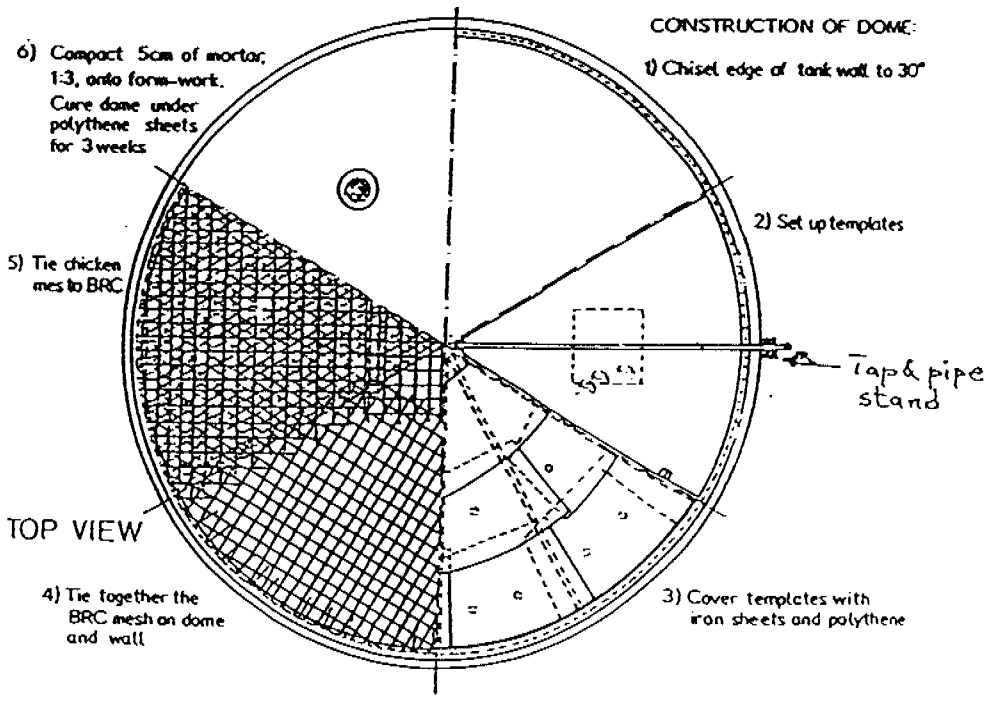
Direct material: TZS 649'
Direct labour : TZS 262'
Overheads : TZS 455'

**Grand total : TZS 1,366'**

# STANDARD DESIGN

# OF A 46 CUBIC METRE WATER TANK



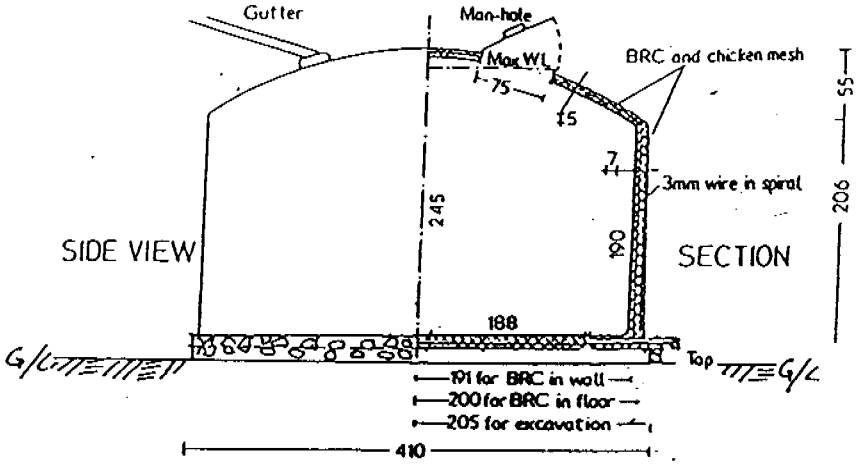

## Standard cost: '000

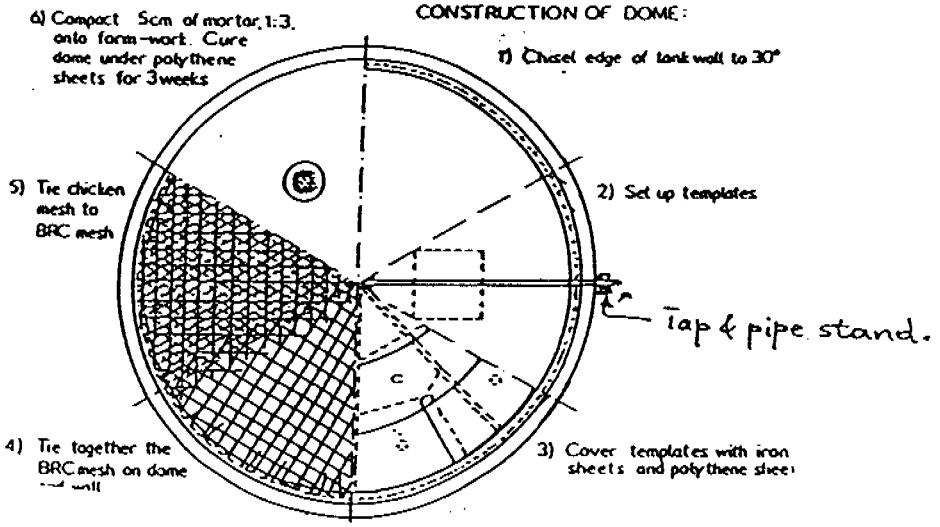
Direct material: TZS 1,480'
Direct labour : TZS 150'
Overheads : TZS 815'

**Grand total : TZS 2,445'**

# STANDARD DESIGN

# OF A 23 CUBIC METRE WATER TANK



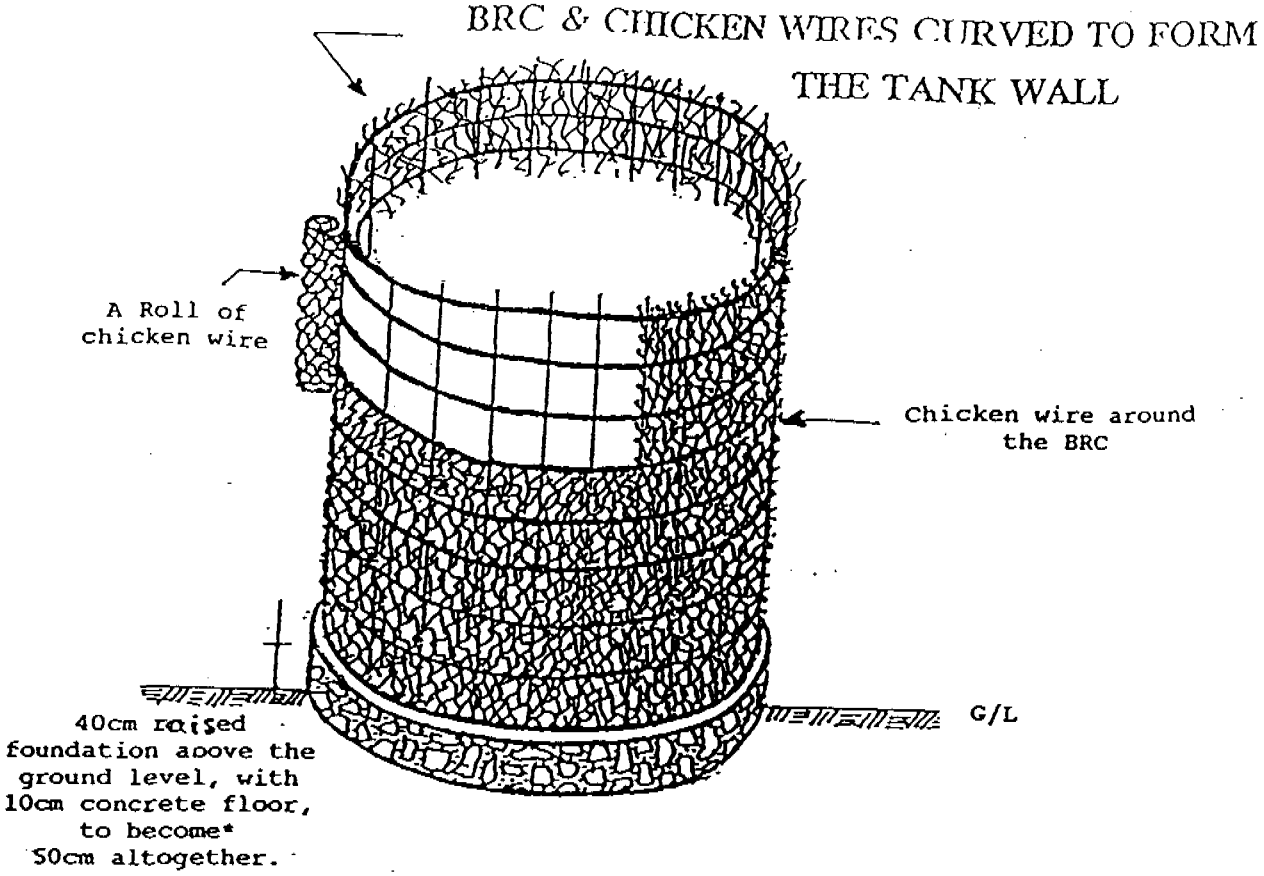

## Standard cost: '000

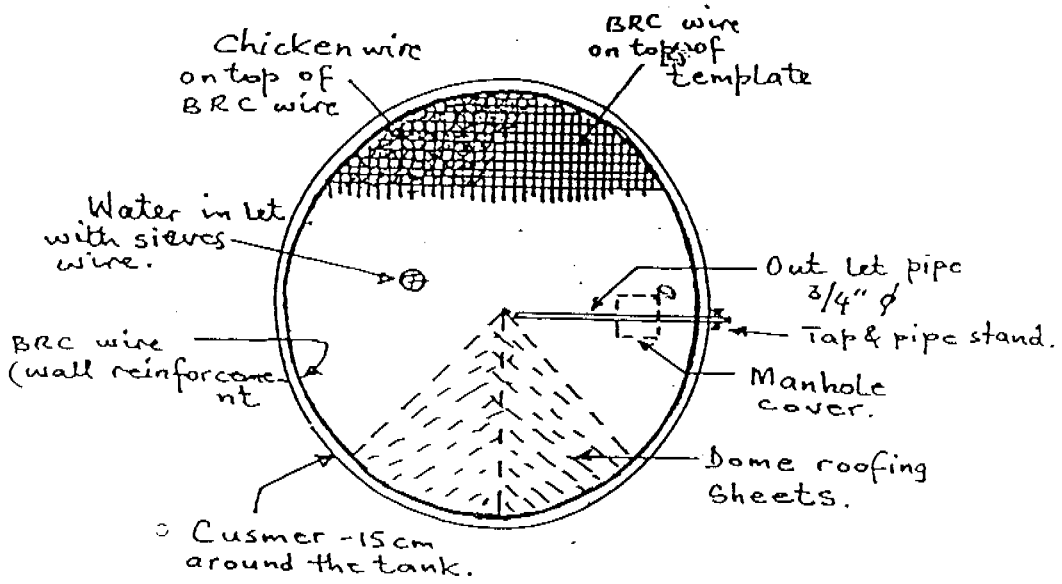
| | | |
|---|---|---|
| Direct material: | TZS | 973' |
| Direct labour : | TZS | 100' |
| Overheads : | TZS | 537' |

**Grand total : TZS 1,610'**

# STANDARD DESIGN

# OF A 10 CUBIC METRE WATER TANK



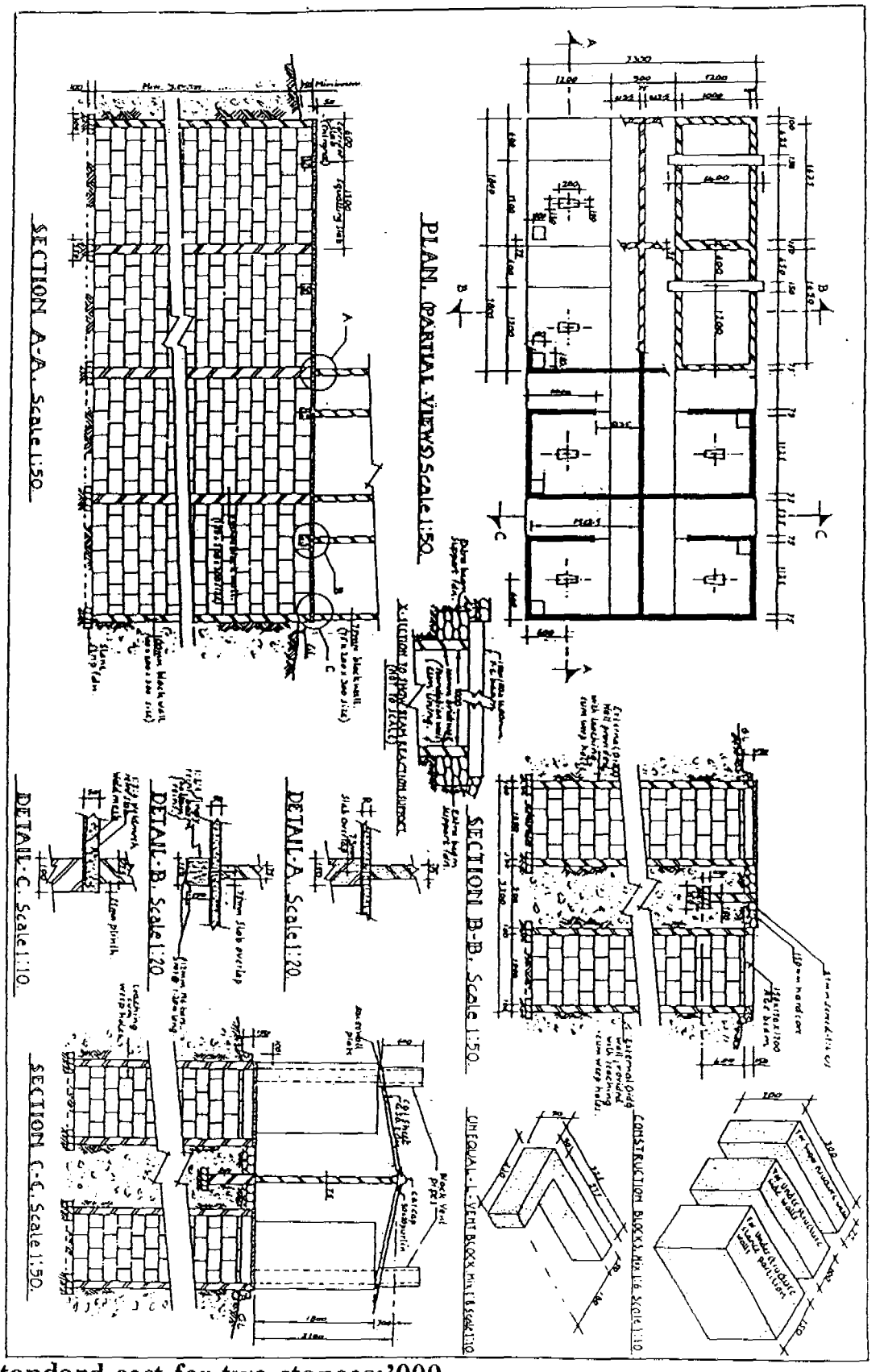




## Standard cost: '000

| | | |
|---|---|---|
| Direct material: | TZS | 652' |
| Direct labour : | TZS | 65' |
| Overheads : | TZS | 359' |

**Grand total : TZS 1,076'**

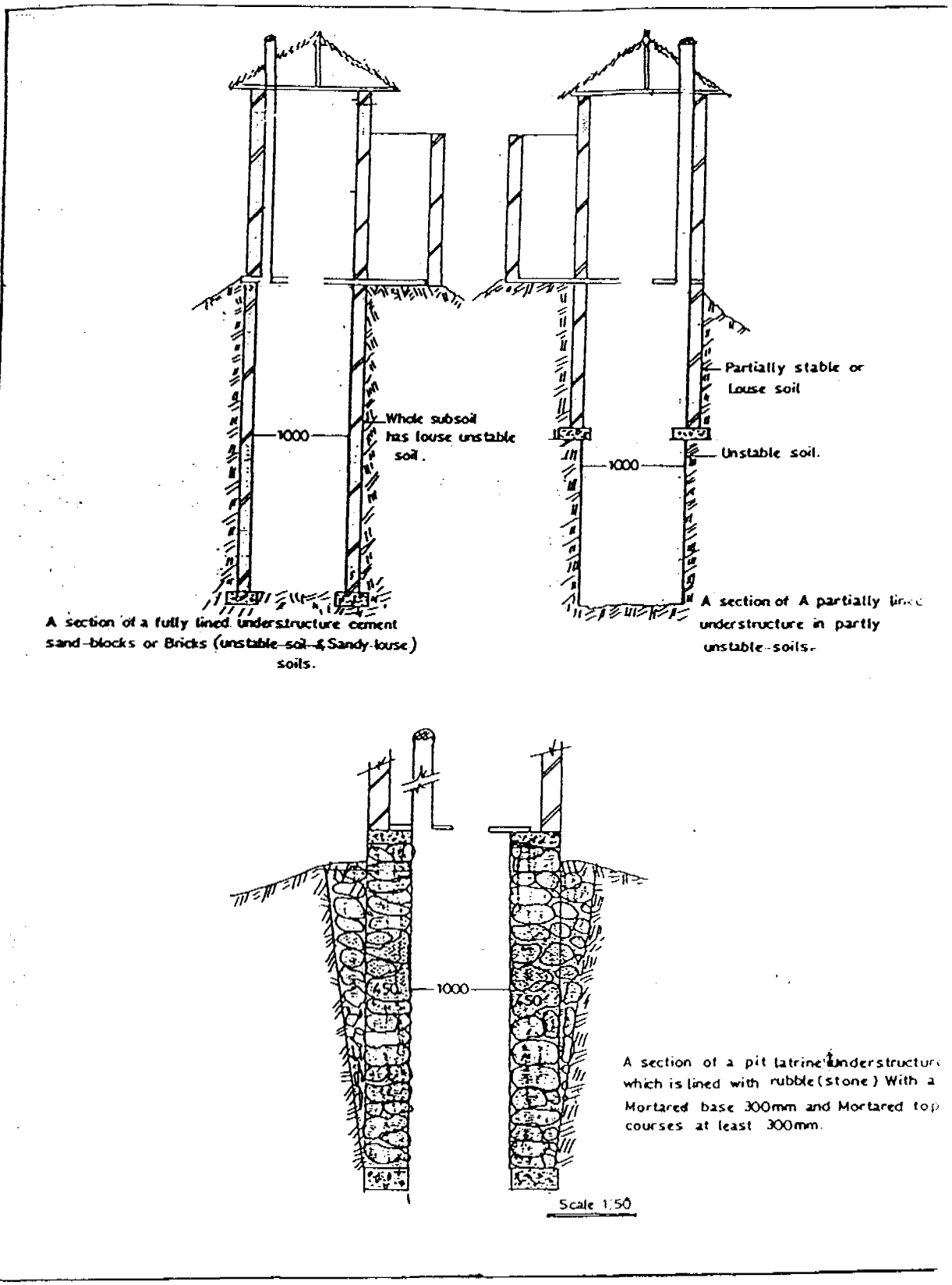
# STANDARD DESIGN
# OF AN INSTITUTIONAL LATRINE




**Standard cost for two stances:'000**

| | |
|---|---|
| Direct materials: | TZS 201' |
| Direct labour: | TZS 20' |
| Overheads: | TZS 110' |
| **Grand total** | **TZS 331'** |

# STANDARD DESIGN
# OF SINGLE PIT VIP LATRINE

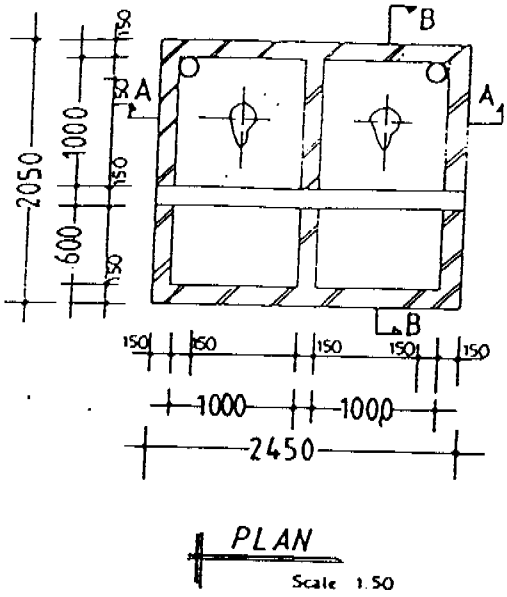



## Standard cost:'000

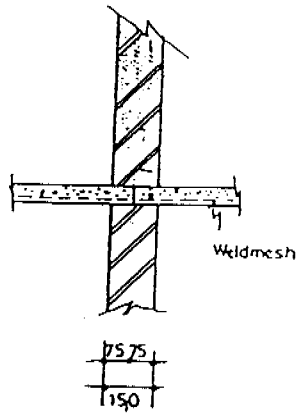
| | | |
|---|---|---|
| Direct materials: | TZS | 60' |
| Direct labour: | TZS | 10' |
| Overheads | TZS | 35' |

**Grand total** **TZS 105'**

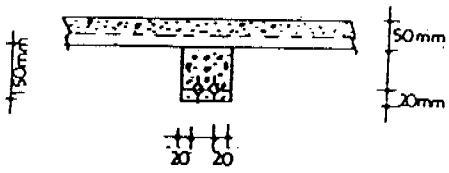
# STANDARD DESIGN OF A DOUBLE PIT VIP LATRINE



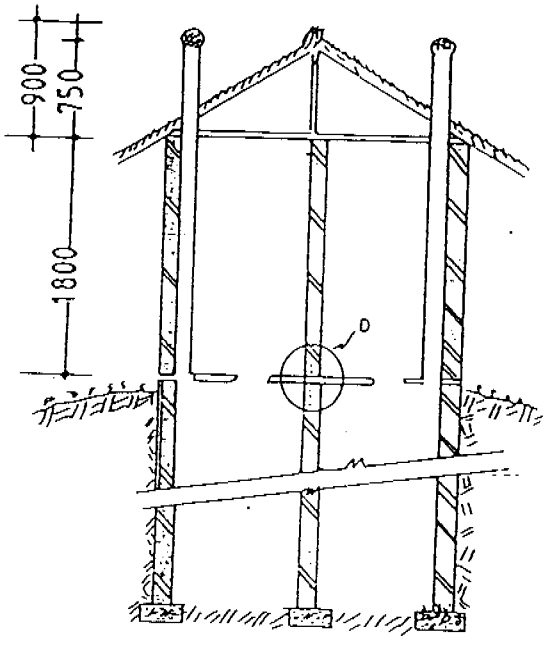

PLAN
Scale 1:50



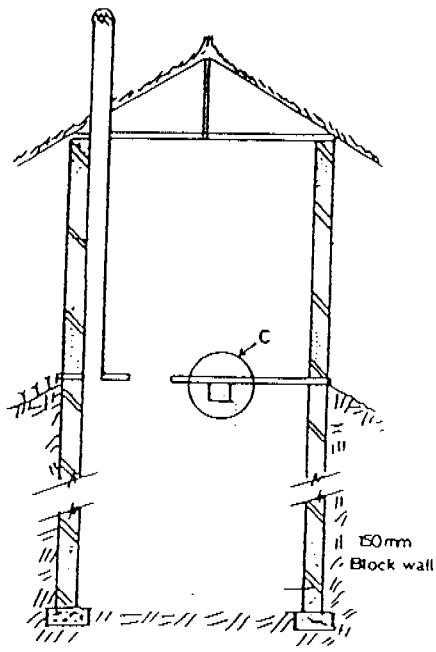

DETAIL D
Scale 1:20




DETAIL C
Scale 1:20




SECTION A—A
Scale 1:50




SECTION B—B
Scale 1:50

## Standard cost:'000

| | | |
|---|---|---|
| Direct materials: | TZS | 78' |
| Direct labour: | TZS | 10' |
| Overheads | TZS | 44' |
| **Grand total** | **TZS** | **132'** |

# HESAWA PROGRAMME

## COST ANALYSIS FOR A WELL

A: General:

| | | | |
|---|---|---|---|
| District | BUKOBA (R) | Type of well | TUBE |
| Ward | KYAKA | Well Capacity(lit/hr) | 1,500 lt/hr |
| Village | BULIFA-NI | Well depth | 12.0 m. |
| Sub-village | KIMUKUNDA | Construction started | 22.8.95 |
| Type of pump | NIRA AF-85 | Construction completed | 01.9.95 |
| Well No. | | Population served: | 400 people |

B: Labour costs:

| | | Amount (TZS) |
|---|---|---|
| Nightouts allowances | | 60,480/= |
| Salaries for the working days | | 6,700/= |
| Other Costs | | 81,260/= |
| Sub-Total - B | | 148,440/= |

C: Materials:

| DESCRIPTION OF ITEM | Unit | Qty. | Price | | Total | |
|---|---|---|---|---|---|---|
| | | | SEK | TZS | SEK | TZS |
| Ring(s) | | | | | | |
| Cover/stand | each | 1 | 72 | | 72 | 6120 |
| Cement for apron | bag | 8 | 72 | | 576 | 48960 |
| Sand | tnp | 1 | | 15000 | | 15000 |
| Aggregates | | | | | | |
| Stones | tnp | 1 | | 15000 | | 15000 |
| Pump head | set | 1 | 786 | | 786 | 66810 |
| Pump stand/Body complete | set | 1 | 1795 | | 1795 | 152575 |
| Riser/Rod of 3.0m | set | 2 | 499 | | 998 | 84830 |
| Riser/Rod of 2.0m | set | 2 | 430 | | 860 | 73100 |
| Riser/Rod of 1.5m | | | | | | |
| Riser/Rod of 0.75 | | | | | | |
| Riser/Rod of 0.5m | | | | | | |
| PVC pipe plain Ø 125/117 x 3m | each | 2 | 139 | | 278 | 23639 |
| PCV pipe slotted Ø 125/117 x 3m | each | 2 | 198 | | 396 | 33660 |
| Wooden cover Ø 125 | each | 1 | 16 | | 16 | 1360 |
| Cylinder diameter 3" 1m | | | | | | |
| Cylinder diameter 2 1/2" 1m | | | | | | |
| Cylinder diameter 2" 1m | | | | | | |
| Cylinder diameter 1 1/2" 1m | | | | | | |
| Cylinder diameter 63mm 1.5m HDPE | each | 1 | 595 | | 595 | 50575 |
| Cylinder diameter 40mm 1.0m HDPE | | | | | | |
| Sub-Total - C | | | | | | 571620 |
| Overheads costs | % | 50 | | | | 360,030 |
| | | | | | | |
| GRAND TOTAL: | | | | | | 1,080,090 |

NB: 1 SEK = TZS

Date.....

Compiled by.....

# HESAWA PROGRAMME

## COST ANALYSIS FOR A WELL

A: General:

| | | | |
|---|---|---|---|
| District | TARIME | Type of well | Ring |
| Ward | BINAGI | Well Capacity(lit/hr) | 200 lt/hr |
| Village | NOGABIRI | Well depth | 16.3 m |
| Sub-village | SENTA | Construction started | June 95 |
| Type of pump | SWN 80 | Construction completed | July 95 |
| Well No. | | Population served | 300 people |

B: Labour costs:

| | | Amount (TZS) |
|---|---|---|
| Nightouts allowances | | NIL |
| Salaries for the working days | | 8000/= |
| Other Costs | | 79580/= |
| Sub-Total - B | | 87.580/= |

C: Materials:

| DESCRIPTION OF ITEM | Unit | Qty. | Price | | Total | |
|---|---|---|---|---|---|---|
| | | | SEK | TZS | SEK | TZS |
| Ring(s) | each | 3 | 153 | | 459 | 39015 |
| Cover/~~stand~~ | each | 1 | 202 | | 202 | 17170 |
| Cement for apron | bag | 10 | 62 | | 620 | 52700 |
| Sand | | | | 15000 | | 15000 |
| Aggregates | | | | 20850 | | 20850 |
| Stones | | | | | | |
| Pump head | set | 1 | 1328 | | 1328 | 112880 |
| Pump stand/Body complete | set | 1 | 711 | | 711 | 60435 |
| Riser/Rod of 3.0m | set | 4 | 263 | | 1052 | 89420 |
| Riser/Rod of 2.0m | | | | | | |
| Riser/Rod of 1.5m | set | 2 | 190 | | 380 | 32300 |
| Riser/Rod of 0.75 | | | | | | |
| Riser/Rod of 0.5m | | | | | | |
| PVC pipe plain Ø 125/117 x 3m | | | | | | |
| PCV pipe slotted Ø 125/117 x 3m | | | | | | |
| Wooden cover Ø 125 | | | | | | |
| Cylinder diameter 3" 1m | | | | | | |
| Cylinder diameter 2 1/2" 1m | | | | | | |
| Cylinder diameter 2" 1m | | | | | | |
| Cylinder diameter 1 1/2" 1m | | | | | | |
| Cylinder diameter 63mm 1.5m HDPE | | | | | | |
| Cylinder diameter 40mm 1.0m HDPE | each | 1 | 791 | | 791 | 67235 |
| Sub-Total - C | | | | | | 507005 |
| Overheads costs | % | 50 | | | | 297293 |
| | | | | | | |
| GRAND TOTAL: | | | | | | 891,878 |

NB: SEK=TZS

Date.....

# HESAWA PROGRAMME

## COST ANALYSIS FOR A WELL

A: General:

| | | | |
|---|---|---|---|
| District | MUSOMA (R) | Type of well | Ring |
| Ward | KUKIRANGO | Well Capacity(lit/hr) | |
| Village | KIABAKARI | Well depth | 6.5 m |
| Sub-village | MADARAKA | Construction started | Sept. 95 |
| Type of pump | NIRA AF 85 | Construction completed | Oct. 95 |
| Well No. | | Population served: | 300 people |

B: Labour costs:

| | | Amount (TZS) |
|---|---|---|
| Nightouts allowances | | 7600/= |
| Salaries for the working days | | 15,200/= |
| Other Costs | | 31. 400/= |
| Sub-Total - B | | 54.200/= |

C: Materials:

| DESCRIPTION OF ITEM | Unit | Qty. | Price | | Total | |
|---|---|---|---|---|---|---|
| | | | SEK | TZS | SEK | TZS |
| Ring(s) | each | 7 | 153 | | 1071 | 91035 |
| Cover/~~stand~~ | each | 1 | 202 | | 202 | 17170 |
| Cement for apron | bag | 10 | 62 | | 620 | 52700 |
| Sand | | | | 45000 | | 45000 |
| Aggregates | | | | 45000 | | 45000 |
| Stones | | | | 10000 | | 10000 |
| Pump head | set | 1 | 786 | | 786 | 66810 |
| Pump stand/Body complete | set | 1 | 1683 | | 1683 | 143055 |
| Riser/Rod of 3.0m | set | 1 | 501 | | 501 | 42585 |
| Riser/Rod of 2.0m | set | 1 | 432 | | 432 | 36720 |
| Riser/Rod of 1.5m | | | | | | |
| Riser/Rod of 0.75 | | | | | | |
| Riser/Rod of 0.5m | | | | | | |
| PVC pipe plain Ø 125/117 x 3m | | | | | | |
| PCV pipe slotted Ø 125/117 x 3m | | | | | | |
| Wooden cover Ø 125 | | | | | | |
| Cylinder diameter 3" 1m | | | | | | |
| Cylinder diameter 2 1/2" 1m | | | | | | |
| Cylinder diameter 2" 1m | | | | | | |
| Cylinder diameter 1 1/2" 1m | | | | | | |
| Cylinder diameter 63mm 1.5m HDPE | set | 1 | 595 | | 595 | 50575 |
| Cylinder diameter 40mm 1.0m HDPE | | | | | | |
| Sub-Total - C | | | | | | 600650 |
| Overheads costs | % | 50 | | | | 327425 |
| | | | | | | |
| GRAND TOTAL: | | | | | | 982275 |

NB: 1 SEK = TZS

Date.....

# HESAWA PROGRAMME

## COST ANALYSIS FOR A WELL

A: General:

| | | | |
|---|---|---|---|
| District | KWIMBA | Type of well | Ring |
| Ward | KIALLA | Well Capacity(lit/hr) | |
| Village | SUMAHA | Well depth | 8·0 m. |
| Sub-village | NGOMBE | Construction started | 10.7.95 |
| Type of pump | NIRA - AF 85 | Construction completed | 27. 7.95 |
| Well No. | | Population served: | 120 people |

B: Labour costs:

| | | Amount (TZS) |
|---|---|---|
| Nightouts allowances | | 6400/= |
| Salaries for the working days | | 12,000/= |
| Other Costs | | 167,145/= |
| Sub-Total - B | | 185.545/= |

C: Materials:

| DESCRIPTION OF ITEM | Unit | Qty. | Price | | Total | |
|---|---|---|---|---|---|---|
| | | | SEK | TZS | SEK | TZS |
| Ring(s) | each | 8 | 153 | | 1224 | 104040 |
| Cover/~~stand~~ | each | 1 | 202 | | 202 | 17170 |
| Cement for apron | bag | 10 | 62 | | 620 | 52700 |
| Sand | | | | 37500 | | 37500 |
| Aggregates | | | | 25000 | | 25000 |
| Stones | | | | 10000 | | 10000 |
| Pump head | set | 1 | 786 | | 786 | 66810 |
| Pump stand/Body complete | set | 1 | 1824 | | 1824 | 155040 |
| Riser/Rod of 3.0m | set | 2 | 501 | | 1002 | 85170 |
| Riser/Rod of 2.0m | | | | | | |
| Riser/Rod of 1.5m | | | | | | |
| Riser/Rod of 0.75 | | | | | | |
| Riser/Rod of 0.5m | | | | | | |
| PVC pipe plain Ø 125/117 x 3m | | | | | | |
| PCV pipe slotted Ø 125/117 x 3m | | | | | | |
| Wooden cover Ø 125 | | | | | | |
| Cylinder diameter 3" 1m | | | | | | |
| Cylinder diameter 2 1/2" 1m | | | | | | |
| Cylinder diameter 2" 1m | | | | | | |
| Cylinder diameter 1 1/2" 1m | | | | | | |
| Cylinder diameter 63mm 1.5m HDPE | set | 1 | 595 | | 595 | 50575 |
| Cylinder diameter 40mm 1.0m HDPE | | | | | | |
| Sub-Total - C | | | | | | 604005 |
| Overheads costs | % | 50 | | | | 394775 |
| | | | | | | |
| GRAND TOTAL: | | | | | | 1,184325 |

NB: 1 SEK = TZS

Date.....

Compiled by...

# STANDARD COST
# OF A 10 METRE DEEP WELL

## HESAWA PROGRAMME

### COST ANALYSIS FOR A WELL

A: General:

| | |
|---|---|
| District | Type of well RING WELL |
| Ward | Well Capacity(lit/hr) |
| Village | Well depth 10.0 meters |
| Sub-village | Construction started |
| Type of pump Nira AF 85 | Construction completed |
| Well No. | Population served |

B: Labour costs:

| | | Amount (TZS) |
|---|---|---|
| Nightouts allowances | | 12.000/= |
| Salaries for the working days | | 22,500/= |
| Other Costs | | 227,120/= |
| Sub-Total - B | | 261.620/= |

C: Materials:

| DESCRIPTION OF ITEM | Unit | Qty. | Price | | Total | |
|---|---|---|---|---|---|---|
| | | | SEK | TZS | SEK | TZS |
| Ring(s) | each | 10 | 153 | | 1530 | 130050 |
| Cover/~~stand~~ | each | 1 | 202 | | 202 | 17170 |
| Cement for apron | bag | 10 | 62 | | 620 | 52700 |
| Sand | trip | 1½ | | 22500 | | 22500 |
| Aggregates | trip | 1 | | 25000 | | 25000 |
| Stones | trip | 1 | | 10000 | | 10000 |
| Pump head | set | 1 | 786 | | 786 | 66810 |
| Pump stand/Body complete | set | 1 | 1795 | | 1795 | 152575 |
| Riser/Rod of 3.0m | set | 2 | 501 | | 1002 | 85170 |
| Riser/Rod of 2.0m | set | 1 | 432 | | 432 | 36720 |
| Riser/Rod of 1.5m | | | | | | |
| Riser/Rod of 0.75 | | | | | | |
| Riser/Rod of 0.5m | | | | | | |
| PVC pipe plain Ø 125/117 x 3m | | | | | | |
| PCV pipe slotted Ø 125/117 x 3m | | | | | | |
| Wooden cover Ø 125 | | | | | | |
| Cylinder diameter 3" 1m | | | | | | |
| Cylinder diameter 2 1/2" 1m | | | | | | |
| Cylinder diameter 2" 1m | | | | | | |
| Cylinder diameter 1 1/2" 1m | | | | | | |
| Cylinder diameter 63mm 1.5m HDPE | set | 1 | 595 | | 595 | 50.575 |
| Cylinder diameter 40mm 1.0m HDPE | | | | | | |
| Sub-Total - C | | | | | | 649270 |
| Overheads costs | % | 50 | | | | 455445 |
| | | | | | | |
| GRAND TOTAL | | | | | | 1366335 |

NB: [illegible]

Date

# BILL OF QUANTITIES
# FOR A 4000 LITRES CAPACITY RWH TANK

| Description | Quantity | Unit price TZS | TOTAL COST TZS |
|---|---|---|---|
| Materials: | | | |
| Cement | 11 bags | 6000 | 66000 |
| Weldmesh 8´x 4´ | 2 pcs | 6000 | 12000 |
| Barbed wire | 200 r/m | 17800 | 17800 |
| Waterproof cement | 1 kg | 1500 | 1500 |
| G.I. pipe | 1 pc | 5000 | 5000 |
| Socket 1/2"dia. | 1 pc | 200 | 200 |
| Bib cock 1/2 dia. | 1 pc | 1500 | 1500 |
| Wire nails 2" & 3" | 2 kgs | 600 | 1200 |
| Timber 6"x1" | 20 r/m | 300/=per m. | 6000 |
| Timber3"x2" | 30 r/m | 250/=per m. | 7500 |
| Sand | 7 tons | 10000 | 10000 |
| Aggregates | 7 tons | 30000 | 30000 |
| Hardcore | 7 tons | 15000 | 15000 |
| Labour | 2 labourers | 1000/=per day for 7days | 14000 |
| Overheads | | 50%(188700/=) | 94350 |
| Total costs | | | 283050/= |

# BILL OF QUANTITIES
# FOR A SINGLE PIT VIP LATRINE

**A-Currently provided by the household.**

| | |
|---|---|
| (1) Pit excavation | |
| 600/= X 2 people X 5 days | = 6000/= |
| (2) Collection of sand/stones | |
| .sand equiv. to 1 tractor | = 10000/= |
| .stones equiv.to 2 tractor trailers | =20000/= |
| .cement for binding 2 bags | =12000/= |
| (3) Making ballast 5-wheelbarrows | =3000/= |
| (4) Roofing materials | =2000/= |
| (5) Water collection | =1000/= |
| (6) Labour for construction | =10000/= |
| **Sub total** | **=64000/=** |

**B- Contribution by the Programme:**

| | |
|---|---|
| (1) 1/2 bag of cement | =3000/= |
| (2) 1/2 weld mesh | =3000/= |
| **Sub total** | **=6000/=** |
| C- Overheads costs (50%) | =35000/= |
| **Grand total costs** | **=105000/=** |

# BILL OF QUANTITIES
# FOR A DOUBLE PIT VIP LATRINE

**A Currently provided by the household:**

| | |
|---|---|
| (1) Pit excavation | =6000/= |
| (2) Collection of | |
| . Sand | =10000/= |
| . Stones | =20000/= |
| . Cement 3 bags | =18000/= |
| (3) Making ballast | =6000/= |
| (4) Roofing materials | =4000/= |
| (5) Water collection | =2000/= |
| (6) Labour for construction | =10000/= |
| **Sub total** | **=76000/=** |

**B-Contribution by the Programme:**

| | |
|---|---|
| (1) 1 bag of cement | =6000/= |
| (2) 1 pc of weldmesh | =6000/= |
| **Sub total** | **=12000/=** |
| **C- Overheads costs (50%)** | **=44000/=** |
| Grand total | =132000/= |