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Water supply in semi-arid Tanzania

WATER SUPPLY IN SEMI-ARID TANZANIA

1.0 INTRODUCTION

We are at the midst of the United Nations Water Supply and Sanitation Decade. In Tanzania, 49% of the total population have access to the provision of clean water.

In this paper, the Water Supply position of the Nations' 20 Regions is shown, indicating that some Regions rank much lower than the National Average.

The paper gives special attention to the three Semi-Arid Regions of Arusha, Shinyanga, Singida and Dodoma where live-stock keeping is the main activity of the people thereby calling for a redifinition of our Water Supply objectives.

2.0 BACKGROUND

The United Republic of Tanzania is situated close to the Equator in the Southern Hemisphere between lat. 1°S and 11° - 30°30 E and 40°E.

Tanzania mainland has an area of 937,062 km^2 out of which 53,483 km^2 is water and 223,844 km^2 is semi-arid land.

Tanzania's climate is essentially equatorial type generally modified by topography, latitude and the Indian Ocean. This phenomenon has basically characterized Tanzania into three Agro-Economic zones namely:-

Zone - 1: Semi-Arid Central areas of Tanzania with rainfall less than 500 mm/annum

Zone - 2: Coastal and Western areas with rainfall between 500-1000 mm/annum

Zone - 3: Highland areas with rainfall above 1500 mm/annum

According to the National census of Tanzania Mainland of 1967 and 1978, the total population was 12.00 million and 17.00 million people respectively. The net change is 42.5% with an annual growth rate of 3.2%. The growth rate in Urban areas is estimated between 6-10% per annum.

3.0 STRATEGIES ADOPTED FOR DEVELOPMENT OF WATER SUPPLY PROGRAMME

In 1971, the Government launched a 20 year Water Supply programme aimed at providing all the people in rural areas with clean water within 400 metres from each household by 1991 (in line with the UN.WSD)

In an effort to achieve this target the Government adopted various strategies These strategies include:-

- Conducting investigations to identify potential water sources particularly those which can be developed on low cost basis)
- Training of Water Engineers and Technicians so as to make available the required manpower for implementing the programmes.
- On the job training of village water Technicians(craftsman).
- Rehabilitation of existing schemes
- Introducing easily maintained systems such as windmills, shallow wells etc. wherever technically feasible.

4.0 SITUATION AT MID DECADE

Due to various constraints, only 49% of the Total population have access to clean water. The major constraints include inflation, lack of foreign exchange for the importation of necessary construction materials, equipments, fuel etc.

Table 1 below gives the picture of the Water Supply position by the end of 1984

TABLE 1: WATER SUPPLY SITUATION IN TANZANIA

REGION	DONOR	% Age of Total pop. Served
* Dodoma	-	79.3
Dar es Salaam	-	75.0
Mwanza	FINNIDA	66.1
* Singida	-	61.4
* Arusha	-	59.0
Kilimanjaro	-	57.0
Coast	-	56.1
Morogoro	Netherlands	54.2
Tanga	W. Germany	49.9
Iringa	UNICEF, DANIDA	49.4
Lindi	FINNIDA	40.0
Mwanza	SIDA	37.0
Mbeya	DANIDA	36.5
Tabora	-	36.0
Kagera	SIDA	32.0
Rukwa	NORAD	30.0
Mara	SIDA	28.0
Kigoma	NORAD	25.0
Ruvuma	DANIDA	23.0
* Shinyanga	Netherlands	22.6

* Semi-Arid Zones of Tanzania.

(Source: Water Engineer Conference Arusha, 1984)

Note: There are villages which are served by natural streams or sources established by individuals which are not indicated in table 1.

TABLE 2 WATER SUPPLY IN SEMI-ARID TANZANIA

REGION	POPULATION	AREA km^2	[illegible]	[illegible]			
			[illegible]	[illegible]		[illegible]	
			Springs	Bore-holes	Shallow wells	Gravity	Dams
Dodoma	572,005	41,311	-	69.9	5.2	-	21.6
Shinyanga	1,560,257	50,764					
Arusha	1,190,000	82,429	-	25.9	25.9	32	16.2
Singida	550,000	49,340	5	57	43.0	-	-
Total	4,450,262	223,844					

SOURCE: [illegible] 1984

Table 1 reveals that most of the recent ~~do~~ donor assisted Regions rank low in Coverage, but such a situation could be exdue several factors as:-

(i) implementation of Water schemes in some of the donor assisted regions has hardly been going on for more than two years.

(ii) a number of donor have felt the need to assist in areas where the water supply situation was already critical.

5.0 WATER SUPPLY IN THE SEMI-ARID REGIONS

The semi-arid regions of Tanzania (Shinyanga, Dodoma, Arusha & Singida) occupy 240% of the Country with 22% of the total population(Ref. Table 2).

Unlike the rest of Tanzania, these areas were traditionally characterised by dryness, overgrazing, nomadic culture of the inhabitants (who were mainly herdsmen).

In order to make the Water Supply programmes effective in these areas, the Government had to try and resettle them in "Ujamaa Villages".

6.0 CONSTRAINTS

There have been several constraints in the construction and up-keep of water supplies in the semi-arid Regions mainly due to:-

- inadequacy of funds
- lack of construction materials
- lack of suitable water sources
- lack of working facilities (transport, tools and machinery)
- lack of qualified and competent manpower
- lack of fuel (diesel)
- non-availability.

These constraints have made the service level to go down such that the actual number of people enjoying the service is very much lower than the one in Table 1 (due to projects which are malfunctioning).

The Ministry of Water in Tanzania is charged with the responsibility of supplying water for human consumption while livestock watering is taken care of the livestock Development Authority (LDA).

However, this creates a discrepancy because it is very difficult to separate livestock from human beings, and thus difficult to expect any "solid help" response to a project intended only for domestic Water Supply.

7.0 RECOMMENDATIONS

- Donor assistance should be sought assist these Semi-Arid regions faced with an acute Water shortage.

- There is a need to redefine the duties of the Ministry responsible for Water Supply such that livestock watering be included.

- In order to achieve the 1991 target, low cost options should be considered whenever technically feasible.

- The Ministry of Water through its Central stores (Kurasini) should try to stock most of the construction materials, equipment etc. hence observering standardization.

Conclusion

It can be realised from the information that this programme has been quite expensive and time taking as Franklin' argues, but without this programme the Ministry would have taken longer time to achieve its present stage. The World wide economic crisis which has hit seriously the developing countries has also affected Tanzania in the implementation programme of water for rural areas by 1991 as envisaged earlier. But despite of all these problems Tanzania has been able to provide nearly 40% of the 6.9 million population living in rural areas and in terms of manpower requirement the Ministry has provided at least three to four Engineers in each of the twenty regions in the country. Some Engineers have been posted to work up to District level. The idea is to send the experts to the villages where they can work close to the people and understand their problems.

There are no plans now of training large numbers of Engineers outside the country but this does not mean that the Ministry is self sufficient in Manpower requirement. The Ministry will continue to rely on the allocation of few Engineers who have been trained locally or sometimes abroad.

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