Ministry for Foreign Affairs of Finland
Finnish International Development Agency
(FINNIDA)

Ministry of Finance
Department of External Resources
SRI LANKA

KANDY DISTRICT WATER SUPPLY AND SANITATION PROJECT PHASE II

OCTOBER 1991 - NOVENBER 1994

FINAL REPORT

JANUARY 1995

NATIONAL WATER SUPPLY AND DRAINAGE BOARD
DEPARTMENT OF HEALTH SERVICES

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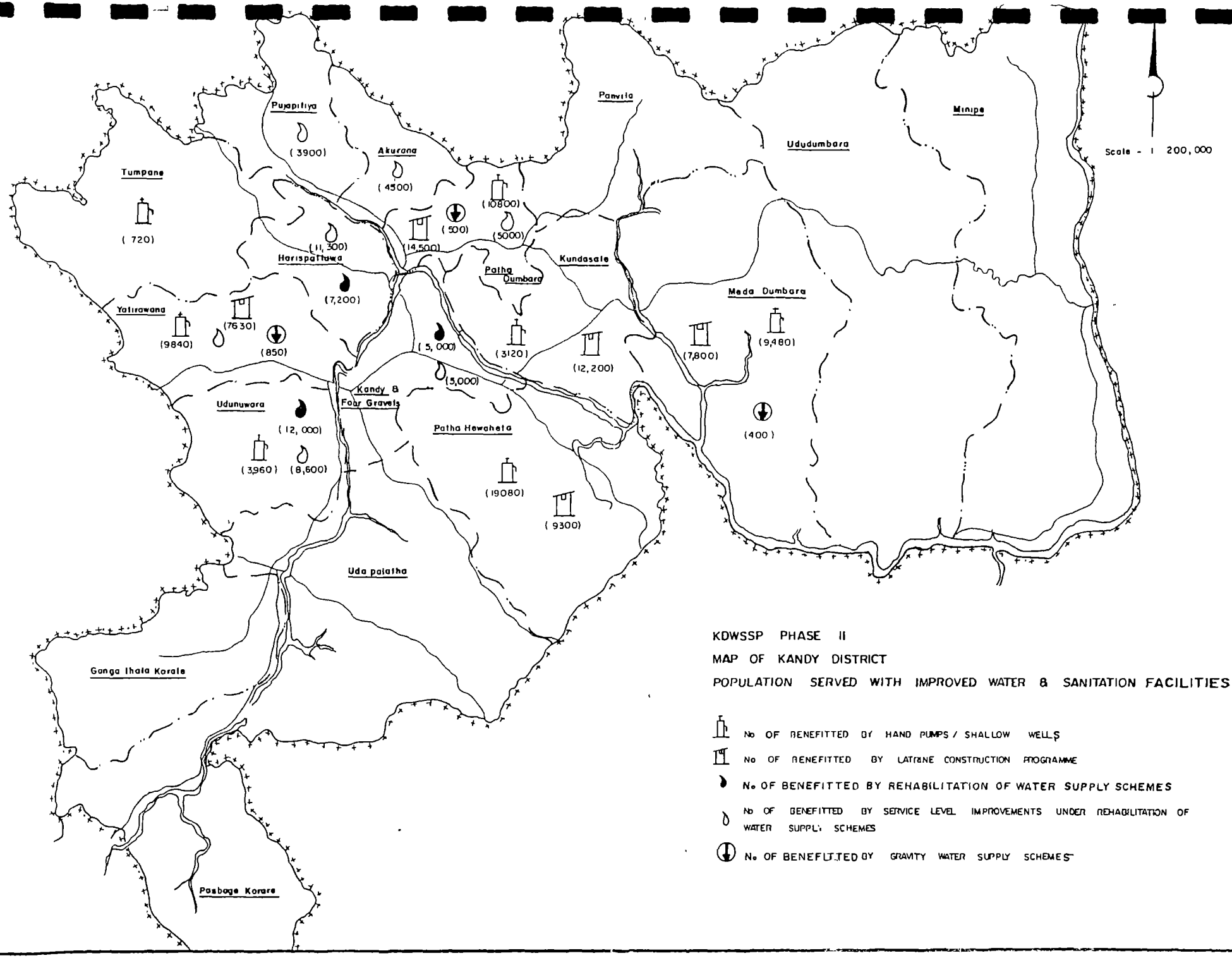
ABBREVIATIONS

AC	-	Action Committee
ADB	-	Asian Development Bank
ADP	-	Automatic Data Processing
AGA	-	Assistant Government Agent
AGM	-	Assistant General Manager
DANIDA	-	Dannish International Development Agency
DDHS	-	Deputy Director of Health Services
DGM	-	Deputy General Manager
DHS	-	Department of Health Services
DPM	-	Deputy Project Manager
DS	-	Divisional Secretary
ESA	-	External Support Agency
FIM	-	Finnish Mark
FINNIDA	-	Finnish International Development Agency
GA	-	Government Agent
GN	-	Grama Niladhari
HEB	-	Health Education Bureau
HESU	-	Health Education & Sanitation Unit
HRD	-	Human Resources Development
HWSS	-	Harispattuwa Water Supply Scheme
HWSSP	-	Harispattuwa Water Supply and Sanitation Project
ID	-	Institutional Development
IDP	-	Institutional Development Project
IEC	-	Information, Education, Communication
IMF	-	International Monitory Funds
IRP	-	Iron Removal Plant
KDWSSP	-	Kandy District Water Supply and Sanitation Project
MHC	-	Ministry of Housing and Construction
MHS	-	Ministry of Health Services
MOH	-	Medical Officer of Health
MOHWA	-	Ministry of Health and Women's Affairs
MP	-	Member of Parliament
MSLRS	-	Million Sri Lankan Rupees
NCC	-	National Co-ordination Committee
NWS&DB	-	National Water Supply and Drainage Board
O&M	-	Operation and Maintenance
PD	-	Project Document
PDHS	-	Provincial Director of Health Services
PM	-	Project Manager
PS	-	Pradeshiya Sabha
RO	-	Regional Office
RSC	-	Regional Support Centre
SLRS	-	Sri Lankan Rupees
UNICEF	-	United Nations Children's Fund
USAID	-	United States Agency for International Development
WB	-	World Bank
WSSSP	-	Water Supply and Sanitation Sector Project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Four Gravels
Udunuwara
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Patha Hewaheta
(400)
(3,960)
(8,600)
(19080)
(9300)
Uda palatha
Ganga Ihala Korale
Pasbage Korare
KDWSSP PHASE II
MAP OF KANDY DISTRICT
POPULATION SERVED WITH IMPROVED WATER & SANITATION FACILITIES
No OF BENEFITTED BY HAND PUMPS / SHALLOW WELLS
No OF BENEFITTED BY LATRINE CONSTRUCTION PROGRAMME
No OF BENEFITTED BY REHABILITATION OF WATER SUPPLY SCHEMES
No OF BENEFITTED BY SERVICE LEVEL IMPROVEMENTS UNDER REHABILITATION OF WATER SUPPLY SCHEMES
No OF BENEFITTED BY GRAVITY WATER SUPPLY SCHEMES

KDWSSP PHASE II

FACT SHEET

1.	Project Title	-	Kandy District Water Supply and Sanitation Project, Phase II.
2.	Project Location	-	Kandy District, Sri Lanka
3.	Implementation Period	-	01.10.91 - 30.11.94* a) Transition Period - 01.10.91 - 31.06.92 b) Consolidation Period - 01.07.92 - 30.11.94*
4.	Project Financing	-	Government of Sri Lanka - 69.52 MRs. Government of Finland - 35.67 MFIM
5.	Institutional Frame Work for Implementation	-	a) Competent Authority, Sri Lanka - External Resources Department, Ministry of Finance b) Competent Authority, Finland - FINNIDA c) Competent Authorities in matters of substance, Sri Lanka - Water Supply and General Issues - National Water Supply and Drainage Board. - Health Education and Sanitation - Ministry of Health and Women Affairs d) Executing Agencies National Water Supply and Drainage Board (RSC) (NWS&DB - RSC) - Water Supply Department of Health Services, Kandy (DHS, Kandy) - Health Education & Sanitation e) Implementing Agency During Transition Period - Soil & Water LTd., Helsinki During Consolidation Period - RSC (Central) of NWS&DB, DHS, Kandy
6.	Major Components	-	★ Institutional Development ★ Human Resources Development ★ Community Education and Participation ★ 478 Hand Pump Wells ★ 4 Piped Systems ★ 8200 Latrines ★ Minor Gravity Schemes ★ Institutional Water and Sanitation Programme

* The completion date was originally scheduled to be over by 31.05.1994 and was later extended till 30.11.94

EXECUTIVE SUMMARY

The assistance of Government of Finland to improve water supply and sanitation started in 1980 with the inception of Harispattuwa Project. Subsequently this programme was extended to the other parts of the district as the Kandy District Water Supply and Sanitation Project.

The two consecutive project implementation phases of the KDWSSP focused mainly on improvement of water supply and sanitation facilities and at the same time improving the capacity of the recipient organisations to extend and upgrade the facilities. The phase I of the programme emphasized Srilankanization process where locals in the project were trained to take more responsibility from their counterpart expatriates. During the phase II of the programme this process progressed further with the emphasis on institutionalization of the programme to respective sector agencies. The integration of the project activities with the complete handing over of responsibilities was the only way to ensure this process.

The implementation responsibilities of the water sector and health and sanitation sector activities were handed over to the National Water Supply & Drainage Board and the Department of Health Services respectively with effect from July 1992.

The integration exercise of the project activities to the line agencies has made a direct impact on the institutions improving their capacities and has streamlined the existing procedures. The decentralization process of the line agencies and technology transfer from the project to the implementing agencies have increased remarkably.

The institution building in the key recipient organisations ie. the NWS&DB, the DHS and the Local Authorities continued during the phase II with greater emphasis on consolidation of improved facilities. In this programme, activities like human resources development, system development and provision of technical and logistical support to the respective agencies have been carried out extensively.

A total no. of 478 Hand Pump Wells were completed exceeding the original target of 365 nos. catering a population of 47,800 in remote and undeveloped areas of the district. The project completed the construction of 3 nos. of new small scale gravity schemes and rehabilitation of 5 Nos. of gravity schemes catering a total population of 3,000. The most encouraging achievement in this exercise has been the increased degree of the commitment of the both beneficiary communities as well as the beneficiary agency from the planning to implementation phases and finally taking over the maintenance of the facilities. In this respect voluntary contributions made by the community as labour, material and land during the construction and voluntary cash contributions for maintenance of the facilities are quiet noticeable.

The project completed five nos. of middle level water schemes catering a total population of 100,000 despite of problems in the construction programme such as delays in awarding contracts and contractor's own performance. The increased water tariff has been introduced in 18 water schemes as the viability requirement to make a remarkable improvement in the cost recovery.

The strategic planning activities continued during the phase II. A feasibility study was carried out to provide water supply to Greater Kandy area as a part of the updating of the Kandy District Strategic Plan.

The Health Education programme continued as scheduled, strengthening the capacity at the level of the newly formed Divisional Director of Health. The sanitation programme was completed achieving a target of 8,700 toilets, despite of many ups and downs during the programme such as heavy rain, shortages of cement and low level of capacity of the recipients selected according to the new criteria.

The experience gained in this programme will be a valuable reference material to plan and implement future projects of this nature.

1. INTRODUCTION

1.1 Overview

Under the drinking water decade programme the government of Sri Lanka embarked on an ambitious decade plan in the year 1980 to provide improved water supply facilities to its uncovered population. At the start of the decade programme only 54% of the total population of 14.6 million persons were provided with improved water supply facilities. This figure was 50% in the Urban Sector and 56% in the rural sector.

Among many other donor funded projects such as Danida, GTZ, JICA, ADB, UNICEF and World Bank in other parts of the country, the water supply and sanitation project in Kandy took the challenge to improve water and sanitation facilities in Kandy District with the financial assistance from the Government of Finland through FINNIDA. The development programme commenced in Kandy in the year 1980 as the Harispattuwa Water Supply and Sanitation Project which concentrated only on a part of the district. In the year 1987 this programme was extended to the other parts of the district as phase I of the Kandy District Water Supply and Sanitation Project and was completed in September 1991.

In addition to achieving its physical targets the Phase I of the project became the center for innovative approaches such as community education and participation, cost recovery, institution building, research and development in the water and sanitation sector.

The entire programme has proceeded towards institutionalization with a special emphasis on capacity building of local agencies from the commencement of the work since 1980. The works started through a completely consultant managed project during the Harispattuwa Project and was transferred to a organization managed jointly by the expatriates and the secondees from the national sector organisations

organisations during the Phase I of the KDWSSP. The Phase II started in October 1991 and further continued to place more thrust on the institutional development process at the same time improving physically water supply and sanitation facilities in the area.

The development which concentrated only on the completion of physical systems at the inception of the programme, has been drifted more towards the consolidation of existing systems and the capacity building within the recipient institutions. The emphasis on sustainability of the improved systems resulted in the slowed down progress of the physical works which was compatible with the growth of the institutional and local capabilities. During the Harispattuwa Project the planning, designing and implementations of the works were completely carried out by a firm of foreign consultants with minimum participation of local agencies. After the completion of the works the sector agencies were forced to take over the improved facilities which they never felt as owned by them. The agencies were not always ready to maintain the system and were dependent on the project assistance even after the handing over of the facilities. The philosophy of the project implementation was changed so that locals and the recipient agencies were completely involved in the planning, designing and implementation process and the role of the expatriates was limited to the advising and guidance to ensure the proper use of funds. This has guaranteed the long term sustainability of the improved systems ensuring technological transfer for the future development of the sector. This participatory approach adhered by the project to improve facilities resulted in a high degree of commitment from the water and sanitation sector agencies, recipient institutions and beneficiary groups ensuring the long term sustainability.

The Development work of this nature has been always a participatory process which completely depends on both the donor and the recipient agencies and the beneficiary community. Since all three sectors have their own priorities and commitments a failure or a success of the programme to achieve the optimum results will completely depend on common consensus and understanding of the issues, problems and opportunities on the each side during the implementation.

1.2 Institutional Involvement

The emphasis of the present project was the development of the responsible sector institutions to ensure the sustainable utilization of the improved facilities and at the same time to improve the capabilities of the institutions to up-grade and extend the facilities in future. In order to achieve the objectives mentioned earlier the project worked with the following GOSL institutions:

a) National Water Supply and Drainage Board (NWS&DB)
b) Department of Local Government (DLG)
c) Local Authorities (LA)
d) Department of Health Services (DHS)

a) National Water Supply and Drainage Board (NWS&DB)

The NWS&DB is an autonomous body under the Ministry of Housing, Construction and Public Utilities. It is the major organization in water sector accounting for about 70% of investments and 80% of operations in the country.

b) Department of Local Government

Within the Provincial Ministry of Local Government, the Department of Local Government in the Central Province is the administration channel through which technical and financial resources are made available for local authorities in all development activities. Rural water supply and sanitation activities are coordinated and monitored at the district level by the Commissioner of Local Government of the Central Province.

c) Local Authorities

Local authorities are now devolved with more powers to operate and manage development activities in their areas as a result of the decentralization process of the GOSL.

Pradeshiya Sabhas and Urban Councils, the existing local authorities in rural and semi-urban areas, are managed by the councils consisting of representatives elected by the public.

The Pradeshiya Sabhas have been given authority regarding provision of water supply and other public services in the areas concerned and have adequate legal status to charge levies for these services from the consumers.

d) Department of Health Services (DHS)

The DHS of The Ministry of Health, Social Services and Transport is responsible for the development of rural sanitation programmes and for public health activities in the country.

Divisional Directors of Health at each Pradeshiya Sabha are responsible to carry out activities of the DHS. Public Health Inspectors and Family Health Workers are deployed to carry out this activity at the village level.

1.3 Significant Changes in the implementation Programme and Environment

The original programme has been revised during the project period extending the project by another period of 06 months up to the end of November 1994. The programme has been extended to the other parts of the district with increased targets as per the decision taken at the National Coordination Committee, the highest level of the coordination for the project activities.

During the project period, the subject of the Ministry of Housing and Construction has been changed as the Ministry of Housing, Construction and Public Utilities.

The national economy in the country was grew steady despite the continuing civil war in the troubled North part of the country. The efforts taken by the government of Sri Lanka to solve this problem through peaceful negotiations have not been successful. However, the investments on new industries in the other part of the country continued with the special patronage given by the government providing additional incentives. Economic reforms continued successfully with the increased drive of the government to privatize business ventures owned by the state.

Although the overall performance of the economy at national and regional levels seems to be satisfactory, the income differences between the top layer and the lowest layer of the income levels of the Sri Lankan society have widened. In this connection programmes for social upliftment for low income groups in the rural and urban areas can be justified. The water supply and sanitation sector has been given top priority by the government of Sri Lanka. However, considering the limitations in the financing and other institutional resources the target to achieve 100% coverage in water supply has been extended up to end of the year 2010.

The investment policy of the government in the water sector has been to recover only 15% of the capital cost while in urban areas the figure is only 50%. In the case of sanitation the investments in rural areas are made on 100% grant basis while in urban areas it is only 50%.

External assistance to the water sector has increased compared to the previous years. The key funding agencies were World Bank, ADB, JICA, FINNIDA, DANIDA, GTZ and UNICEF.

2. THE OBJECTIVES OF THE PROJECT

2.1 Long Term Objective

The long term objectives of the phase II of the KDWSSP can be defined as "Institutional and Local Capability of the Sector Line Organisations to operate, manage, maintain, extend and upgrade water supply and sanitation facilities for the people in Kandy District, while 310,000 people have sustainably benefitted of the improved water supply and 254,000 of the improved sanitation. This calls for improved level of management and up keep of the improved facilities with emphasis on the consolidation for future sustainability.

2.2 Short Term Objective

The immediate objective during the phase II is the "Institutional Development of Line Agencies to carry on the project activities without the help of a separate project organisation and simultaneously improve sustainable water supply for over 95,000 people and sanitation for 49,000 people in the district." According to the immediate objective the emphasis has been placed on the capacity building with the transfer of responsibilities to the sector agencies achieving the physical targets at the same time.

The major output in this exercise will be the developed competence of the relevant sector organisations and influencing on going village level, district level and national level development programmes to ensure future sustainability of the improved facilities.

The approach to the institutionalization lead to the integration of water sector activities to the NWS&DB, RSC, Kandy and Health and Sanitation activities to the Department of Health Services Kandy with effect from 1st of July 1992. The line agencies gradually took over the role of the consultant as the implementator or the decision maker of the programme.

3. IMPLEMENTATION OF THE PROJECT

3.1 Management Concept

The management concept of the project underwent a radical change during the period. The organisation of the water sector which was a discipline oriented from the inception of the development co-operation in 1980 was converted to a programme oriented organisation in 1992. (see the organisation chart in Appendix 17)

The Project was managed by the Project Manager and was assisted by the Deputy Project Manager. The re-orientation of the organisation on discipline basis was a challenging task because the persons of different disciplines did not think and talk in the same way. There was a wide gap between Engineers, Sociologists, Geologists, Chemists, Drillers, Community Mobilizers and Trainers. Due to the bad experience gained in the earlier phases this decision to change the organisation was to ensure a better coordination in the project organisation from top to low level.

The two main programmes were managed by two Division Heads directly reporting to the project management. The Chief Engineer (Wells) was responsible for the Implementation of the Hand Pump Programme, Small Scale Water Schemes and the Institutional Development Programmes. The Division consisted of three different departments viz Well Construction, Community Relations and O&M Support. The Chief Engineer (Water Works) as the Head of the Water Works Division was responsible for managing the implementation of the major water schemes and the project work shop. The strategic planning department was directly responsible to the DPM.

The Executive Board, consisting PM, DPM, three Division Heads and the Lead Adviser, was the most important decision making and monitoring level for the routine activities of the Project. The progress was monitored monthly and the programmes were rescheduled accordingly.

In general, this structure worked quiet well ensuring better coordination and understanding of persons in the project, minimizing conflicts and creating a team effort at the grass root level and at the same time making work more productive.

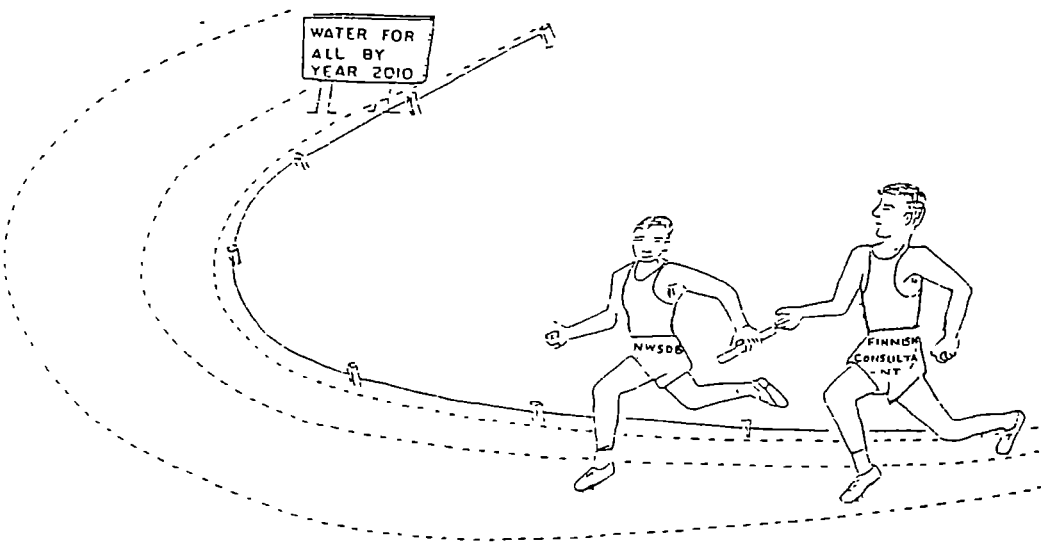
The Health Education and Sanitation programme was handled through HESU, a special programme unit created at the Department of Health Services, Kandy. This unit was directly responsible to the Provincial Director of Health and was manned by two coordinators, one responsible for the sanitation and the other for the health education since 1992. The implementation responsibilities were further integrated gradually at the divisional level to the Health Department limiting the role of the HESU only to monitoring and coordination functions.

3.2 Integration of project activities

The emphasis of the phase II, of the project has been the development of responsible institutions in the sector to expand the institutional capabilities to up-grade water and sanitation facilities while ensuring sustainable utilization of the same, in future. In this respect the water supply related activities was integrated to the National Water Supply and drainage Board and Health and Sanitation related activities was integrated to the Department of Health in Kandy with effect from 1st June, 1992 as a part of project development activity.

Many direct employees of the project saw the integration process as a disaster and were reluctant to undergo the change of the environment, from a expatriate managed flexible system to a system of rigid bureaucracy within Line Agencies. A small percentage of the employees completely deserted the project, fearing the change of management style and the setup and others could face and manage the change with resistance. During the early part of the integration, it could be observed that almost all the direct employees felt themselves as strangers in the system and were suspicious or not confident on the new management for some time. However, it took nearly 8 - 9 months to get the employees adopted to the new rules and regulations and the environment within the line agencies.

The senior level and middle level management of the line agencies, received the integration with a mixed feeling. It became an opportunity for some and for others it was a managerial headache and wanted to postpone the problems and the issues related to development activities.



NWSDB TOOK OVER THE COMPLETE RESPONSIBILITY OF PROJECT IMPLEMENTATION FROM THE FINNISH CONSULTANT IN JULY 1992

As expected the handing over of the project implementation responsibility from the consultant to the Line Agencies affected the overall production of the project. The transition period had been too short and therefore, in real terms it took many months to recover the momentum of development. Both agencies the NWSDB and DHS were determined to achieve the project targets with the taking over of the responsibilities in order to achieve the ultimate sector coverage in the National frame. The integration really made a big impact on the respective agencies in the areas of personal, financial, administrative and technical policies.

3.2.1 NWSDB

The National Water Supply and Drainage Board identified the short comings on their own system and remedial action were taken to streamline and expedite the project activities.

The personal policy of the organization underwent a radical change with regard to recruitment. In the first time of the NWS&DB the contract basis employees were offered salaries points which are 50% higher than normal NWSDB salary structure based on experience, competence and the market value. This was done on a exceptional basis for recruitment for the project. As at today this has become a generalized practice for the other similar assignments within NWSDB.

The Project Director position held by a senior AGM in Colombo was transferred to DGM (RSC - Central) making a major change of management policy towards decentralization of major project administration to Regional Support-Centres. This change brought mixed results to the project activities, where some of the physical activities were badly affected while most of the programme involving the participation and co-ordination between different departments of RSC made a remarkable progress. The impact on the RSC in this respect has been quiet noticeable in the field of planning, tendering and design. Exchange of views and sharing of experiences with parallel units within RSC increased remarkably. The rotation of experienced staff and sharing resources were made possible within the RSC (Central). The gaps were narrowed and barriers were lifted at regional level, within the RSC (Central) strengthening it's operation in many areas.

The other important aspect in this exercise has been delegation of more financial authority downwards where the financial authority level of DGM in the RSC (Central) and Project Manager and Divisional Heads in the project were upgraded to the next highest level within the NWSDB.

The NWS&DB identified importance of absorbing multi disciplinary teams for ensuring effective and smooth integration process. Entry of well trained scientists, Engineers, Sociologists and experienced skill grades to the NWSDB setup strengthened the KDWSSP capabilities as a technically sound and innovative unit within the NWSDB.

Apart from the primary integration process of the project management into the NWS&DB the most important item in the integration process has been further integration of parallel units in Regional Support Centre that with the project, in order to ensure capacity building of the each specialty areas for future sustainability. An action plan was drawn up for gradual integration of these units within the project that would minimize the role of the project unit at the end. This whole exercise had stimulated the technology transfer and ensured optimization of resources in long term.

3.2.1.1 Laboratory

The project laboratory became the first such unit to be integrated to regional office laboratory. The regional office laboratory was housed very tightly in University Water Scheme building until 1992. Although many equipments and accessories were handed over to the laboratory by many different projects, these equipments were kept in boxes unopened for many years due to unavailability of a proper place and proper action plan for installation and subsequent utilization. After the decision taken to integrate the project laboratory with the regional laboratory, steps were taken to house the integrated unit at the service building of Udunuwara - Yatinuwara intake site.

The integration of the laboratory yielded excellent results in the process of water quality controlling in the region as well as transferring the technology to the other regions in the RSC - Central. Deviating from the conventional function of water quality controlling the laboratory became the center for many research and development to solve the critical operational problems in water treatment in many water schemes within RSC. The gap between Engineers and Chemists had narrowed down building-up better co-ordination and more team work approach, in routine works.

The role of the Chemist in the NWSDB has been traditionally limited to the laboratory or to report on the status of water quality. The Chemist's scope had widened in the new set up after the integration where they were attached to the field with continuous inputs to improve the water quality with process controlling.

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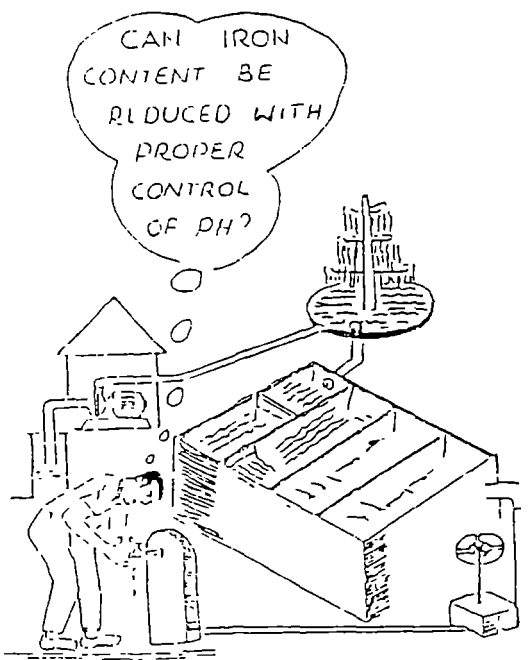


PRESENT

One of the other important achievements of this unit could be mentioned as commercializing the water quality testing within the NWSDB, as well as to out side agencies and the private sector. Since the integration the laboratory has generated a total of 1.2 million SLRS. as income from the services given to outside organisations.

3.2.1.2 Work Shop

In late 1993 it was decided to integrate the project work shop that with the regional Work shop which was very tightly based at the University Water Scheme. Similarly as in the case of the laboratory many equipment and accessories were kept unused and boxes were kept unopened till such time. With this integration process the regional workshop was established in Gohagoda with the complete taking over of the project workshop by the Regional Office, Kandy. This established unit, operated successfully on commercial basis within NWSDB.

3.2.1.3 Training Unit and the P & D Section

Due to limitation of space it was not possible practically to commence integration of the training, planning and design sections of the NWSDB. In this situation this process was only limited to sharing of experiences and transfer of Technology and joint efforts for strategically important activities.

3.2.1.4 Ground Water Unit

A Ground Water Unit also was established within the RSC-Central with the integration process at the later part of the project. This has become extremely important in order to ensure future continuity of the hand pump programme within the area.

3.2.2 Department of Health Service

The Health Education and the Sanitation component of the project was taken over by the Department of Health as a part of the integration process. A special unit named as Health Education and Sanitation Unit (HESU) was established within the Department of Health, at the beginning of the phase II in order to implement the Health and Sanitation Programme of the Project. This unit has become the nucleus of the two programmes and was manned by both permanent staff from the DHS as well as the experienced persons released from the project. From 1st July 1992, the programme was completely handed over to DHS with the channelling of funds. An expatriate Health and Sanitation Advisor was full time stationed at the Department of Health Services in order to ensure continuous technical and managerial inputs for the whole programme.

From the year 1993 the role of the health authorities were intensified at the periphery level as per a decision of GOSL where Divisional Directors of Health positions were established at Divisional level. With this decentralization process the implementation responsibility was transferred to the DHS level, minimizing the role of the HESU to the facilitating and monitoring function. The most important aspect in this exercise has been getting active participation of family health workers, Public Health Inspectors and Health volunteers in improving sanitation facilities and carrying out health education at grass root level as a routine activity.

3.3 Project Coordination

Due to complexity nature of the different institutions and agencies in the programme the success of the whole programme was completely dependant on effective coordination. Therefore, project implementation has been coordinated at the following meetings.

a) Monthly Provincial Meeting at each Pradeshiya Sabha or Division where implementation is active

b) By monthly District Coordination Committee Meetings chaired by Chief Secretary of the Provincial Council.

c) Monthly Coordination Meetings including Regional Support Center, DHS and the Finnish Consultant.

d) By monthly separate coordination meetings with RSC and DHS.

e) By monthly NWSDB/FINNIDA/DHS meetings at the GM-Counsellor level

f) Quarterly National Coordination Committee meeting at the Ministry level.

4. ACHIEVEMENTS

4.1 General

After the completion of any project the most common question asked is "Has the project achieved its objectives?". This will be a difficult question to answer for an insider and the most impartial assessment could be made only after a proper post evaluation.

One have to note that the project objectives can only be achieved through the long term success of the project outputs and results. Both the project management and the relevant institutions in the Government of Sri Lanka can only control the implementation by careful planning and monitoring of outputs and their subsequent results. The achievement of the long term objectives depend to some extent on external influences such as the availability of the financing and social, political and cultural attitude prevailing in the country for development. The magnitude of the implementation may not be sufficient to influence on the national level policies in the sector.

4.2 Achievements of the Objectives

The immediate objectives of the phase II has been defined as "Institutional Development of Line Agencies to carry on the project activities without a help of a separate project organisation and simultaneously improve sustainable water supply for over 95,000 people and sanitation for 49,000 people in the district".

The integration process gradually faded away the existence of a separate project organisation out side the line agencies. After July,1992 the entire implementation responsibilities were transferred to the NWS&DB and the DHS fulfilling one part of the immediate objectives. However, it has been required to establish a special project

organisation within the line agencies with a plan for secondary integration of the activities with the different sections within the agencies. This plan could not be achieved to hundred percent as expected due to few reasons such as;

a) Limitations of the existing office spaces within the agencies did not allow any new additions to the staff and resources for a real physical integration. Also the expansion programme of the buildings did not commence early enough to accommodate this situation due to limitation of funds and inproper planning of the activities.

b) The target beneficiary groups of the project were located only in selected areas of the Kandy District while the responsibility of the NWS&DB (RSC) covered many other districts. In the case of the health sector, the Department of Health Services (Kandy) covered the entire district. Due to this reason it has been required to avoid a confusion of the project objectives with the daily routine works of the respective agencies and also to ensure proper utilization of resources. With this arrangement the monitoring of the funds from the donor agency was easier among many other interests of the agencies.

However, integration of the laboratory and workshop were relatively successful mile stones in this direction.

Reviewing the physical outputs of the project one can see that 47,800 persons were benefitted of hand pump wells while 92,750 persons of pipe born water supplies. The total no of beneficiaries in the water sector was 140,550 exceeding the original target while in sanitation 50,200 persons were benefitted.

It is very difficult to identify separately the achievements due to the project programme, in the field of the institutional building as there are many other inputs from the USAID Project, ADB Project and own funding sources of the NWSDB.

However, one can observe that there is a remarkable progress made in operations and maintenance within the NWS&DB decentralized regional setup. The planning and design capacities have increased remarkably as well as the construction management, increasing the capacity of the NWS&DB to extend and upgrade water systems in the future.

The achievements of the ultimate objective of the sustainability of improved facilities can be assessed only after a decade.

4.3 Planning

4.3.1 General

Planning was recognized as the most important activity of the KDWSSP which determines the direction and shape of the future water supply development in the district, even making a considerable impact on the national frame in the water sector. These planning activities can be defined as the capability and commitment of the line organisations (NWS&DB) to extend and upgrade water supply facilities in the area.

The Kandy District Strategic plan which was completed in 1989 during Phase I was the base to continue the planning process in the Phase II. Flow measurements were carried out on daily basis in potential surface water sources utilizing voluntary or partly paid persons. This is particularly valuable because flow varies daily and normal monthly readings do not give an accurate picture for the planning purpose. This is an example of the project innovation introduced to the normal practice of the NWS&DB. The yield of strategically important groundwater sources were tested and verified as a part of the planning process. Although the groundwater extraction has not proved to be a trouble free technology according to the experience of NWS&DB in Kandy, still this option seems to be the most cost effective solution in many areas due to low level of investments.

Aerial photographs and 1:10,000 maps prepared by the Agricultural base mapping project and FORLUMP of Mahaweli Authority of Sri Lanka were used extensively by the project in the planning processes. The project updated population figures according to the sociological follow-ups. The most significant achievement has been the transfer of the planning method to the Planning and Design section of the RSC with the introduction of planning tools such as maps, population data, and flow measurements and rainfall data. This has changed the planning process from adhoc requirements based on political priorities to the more systematic approach.

The other important achievement has been the development of the flow model for one potential surface water source in Kundasale based on the flow data of few years correlated with the rainfall data for a longer period.

4.3.2 Strategic Planning

An integrated Master Plan to provide the pipe borne water supply to Kandy city and suburbs has been developed by the Project as a part of updating of the strategic plan for the Kandy District. The special feature in this exercise has been the integrated approach which took into account the ever growing demand of pipe borne water in the Kandy Municipality area and adjoining 10 local authority areas. This planning area has been identified as Greater Kandy covering a population of 480,000 in the year 1993. At present only around 58% of the population is served with piped water.

Ten out of the twenty eight water supply schemes which deliver water to the Greater Kandy area get water directly from the Mahaweli river or its tributaries corresponding 81% of the total supply. Balance 16% comes from bore holes and remaining 3% from spring fed schemes. The present total production capacity, 69,100 m^3/d, has to be upgraded to cater a total demand of 165,000 m^3/d. The special features in this proposal are possibilities to arrange a phased out investment and minimize the number of the river intakes to three depending on the topography and the demand centres.

4.3.3 Investment plan for next 5 years

The preparation of the investment plan for the next 5 years which is one of the major objectives of the project has been accomplished by the NWS&DB (RSC) Central.

This is a medium term investment plan for the water sector covering the Kandy area. A considerable part of funding is from the own sources of the GOSL and the balance is from external sources. The strategy to implement this plan is to utilize available local resources within the NWS&DB and the other external organizations. The proposed programme will guarantee the continuation of the sector development after the project.

4.3.4 Updating of Design Criteria

Updating of the existing design criteria has been carried out based on the experiences of the completed schemes for the parameters such as consumption pattern, unaccounted for water, average consumption and peak factor etc. which are useful for planning in future.

4.3.5 Specific Planning

The project carried out specific planning activities for small scale water schemes involving beneficiary communities and local authorities in the planning process. The flow measurements and need assessments at the village level were continued on voluntary basis. Locating of reservoirs, stand posts etc. were completely the responsibility of the community and the local authority with minimum guidance from the Project.

4.3.6 Preparation of Groundwater Protection Plans

The Groundwater protection plans were prepared at the later part of the Project for all the Groundwater sources implemented under the HWSSP and the KDWSSP as an immediate priority. The success of the implementation depends on the NWS&DB (Regional Office) who will own and maintain these intakes.

4.3.7 Use of Appropriate Technology

A careful consideration were given in utilizing low cost and simple technical solutions to upgrade water supply at the village level instead of pipe borne water on adhoc basis. Many requests for unviable piped water supply systems were responded with few hand pump wells. The planners of the Project were trained to think for low cost affordable and viable systems.

4.4 Designs

Designing became important as the designs had to be completed during the early part of the Project in order to complete construction works within the project period according to tender procedures of the NWSDB. Considering the limitation of the inhouse design capacity the project attempted to utilize sub consultants as well as the design capacity of NWS&DB's head office to meet the design requirements.

Expertises of the expatriate Engineering Advisor was brought into the Project to advise and direct local Engineers in the preparation of designs and tender documents as a part of the on-the-job training and skill development programme.

The tender conditions were modified to make the construction management simple. In addition considerable percentage of the contracts were planned to be implemented as package type contracts deviating from the conventional type; splitting the supply of materials, labour and the electro-mechanical works.

4.4.1 Use of Local Consultancy Services

Use of local consultants became a practice and was continued after the taking over of the implementation by the NWSDB. This enhanced the role of the private sector in the water sector development and became a regular practice within the NWS&DB. Local consultancy resources were utilized to design the RSC building, as well as the Welamboda water supply scheme.

One of the most encouraging achievement has been the utilization of a local consultant through the NWS&DB procedure to carry out the Environmental Impact Study for the first time in Sri Lanka on a proposed water supply Master Plan.

The RSC-Central having identified the advantages of this practice has been a pioneer within the NWSDB in utilizing these services in a small scale. This has eventually eased the pressure to complete routine activities in time.

4.5 Piped Water Supply

4.5.1 Strategy

The viability was the governing criteria to implement piped schemes during the project period. One criteria was to achieve viability through a scheme specific tariff which recovers O&M costs and 15% of the capital costs. This has been achieved in the schemes managed by the local authorities through the tariff development process launched by the O&M support department of the project.

The other alternative criteria was the goal to achieve the viability on the national tariff. Under this programme some schemes managed by the NWSDB and selected feasible were upgraded. However, according to the national policy, only O&M costs have been recovered in low level service systems such as small gravity schemes with stand posts.

The project decided the implementation mode after the planning and design stages according to the time frame available for the construction. As emphasized in the Project Document, local contractors have been used in the execution of works instead of maintaining a large project organisation. A priority was given to utilize package type contractors in the whole exercise instead of split type contractors. Arrangements also were made to obtain the active community participation at all levels from the planning to construction phases.

4.5.2 Outputs and Inputs

Under this programme 26 kms of pipe lines have been relayed by the Project in the Udunuwara -Yatinuwara water schemes ensuring a reasonable service level to a population of 35,000. In addition eight(8) middle level water schemes have been improved and augmented. The project invested a sum of SLRS 100 million on these systems benefitting 250,000 persons in the district. Three small scale new gravity schemes have been constructed and five existing schemes rehabilitated through the active participation of the local authorities and the recipient communities.

The Project gave due considerations for the degree of the commitment from the communities and the local authorities during the screening process. According to the selection criteria of the Project 30 proposals were dropped during the planning process. Further due to the objections raised by the present users of the water source two middle level water schemes were dropped out from the implementation programme.

The experience to mobilize the community to participate the construction process has been encouraging specially in the pipe laying work.

4.5.3 Experience on using Local Contractors

The main problem encountered with almost all local contractor was the non availability of sufficient resources such as manpower, material and equipments. In the meetings with contractors these shortcomings have been continuously highlighted but rectification measures have been taken very slowly.

Use of manpower instead of proper machines caused unexpected delays in the implementation. In the pipe laying contracts, where blasting was required in a large scale contractors were poorly mobilized with necessary resources.

On the other hand, the contractors were not quality conscious at all when supplying material and equipment for permanent installations. The Harispattuwa consolidation contracts were delayed badly due to the contractor's inability to supply pipes as per the specifications.

The construction of the building for the Regional Support Centre carried out by the State Engineering Corporation (SEC) faced many problems. Works stopped continuously due to lack of material and equipment and labour force in time.

Strict adherence to the specifications by the project has led the contractors to improve the quality of works. Working for the project was a extremely useful training exercise for all the contractors.

The major problem seen to prevent the development and the growth of the contractor has been lack of continuous contracts and the under cutting by the contractor's themselves.

In order to achieve the full coverage in the water sector as per the national corporate plan, it is very essential to ensure the availability of competent local contractors.

4.6 Hand Pump Well Programme

4.6.1 Strategy

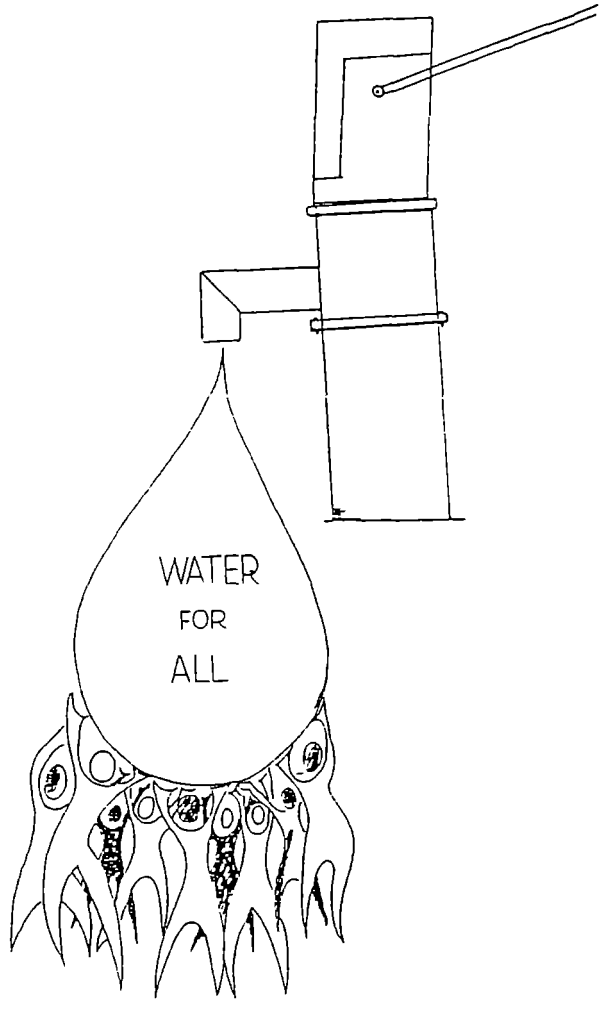
The strategy to implement the Hand pump programme changed during the phase II according to the famous New Delhi declaration "Some for all rather than more for Some", extending the programme in other remote and undeveloped areas of the district. This approach reduced the no of new facilities provided for one local authority area matching better with the gradual increase of maintenance capacity of the institutions.

The policy was to develop hand pump water supply in areas with a population density less than 1500 people/km^2 and where gravity schemes were not feasible. Hand pump wells were provided in the areas which were more than 150m from roads and not covered with the existing or with proposed piped water supply. In addition, hand pump wells were provided in limited numbers to areas which have been designated for the pipe borne water supply, if the implementation was expected only far future and the need was so acute. The hand pumps were located based on the criteria of user groups comprising 15-20 families per well with a maximum walking distance of 500m to the well. However, this was flexible in exceptional circumstances to cater isolated pockets of the population according to the need and the commitment.

The selection of the area for the implementation within the district was completely dependent on factors such as health status prevalent in the area and the need and commitment of the recipients.

The Community Education and Participation (CEP) process adopted during the phase I was further revised and updated based on the follow up findings to ensure sustainability of the improved systems. The participation of the beneficiary community was mobilized through the action committees at village level and water consumer societies at hand pump level in all stages of the programme ie. in the planning, construction and maintenance phases.

The CEP process has taken the programme from the conventional top to down approach to a bottom to up approach. The concept of this development process in the village level was centered around the people where as the beneficiaries became the decision makers of the entire programme and the project played a facilitating role with the provision of technology and material support.



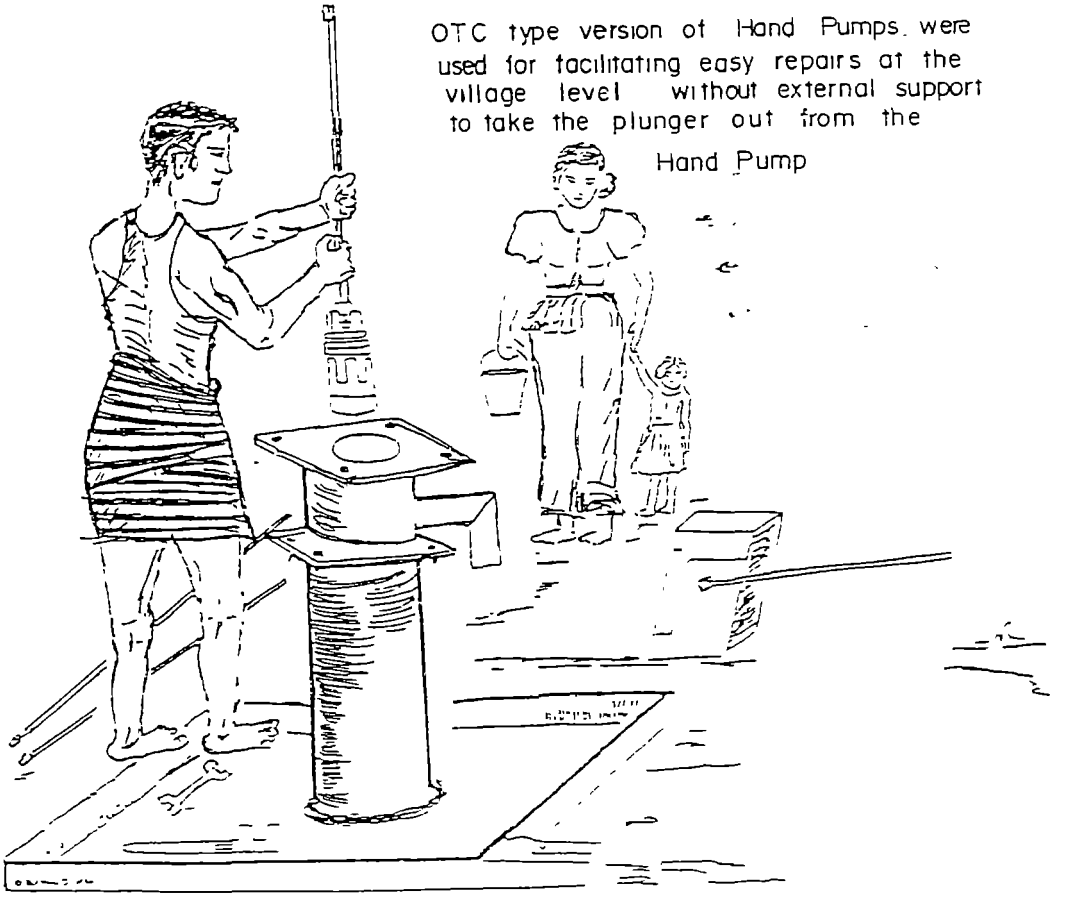
Bottom up approach was the main theme behind the Hand Pump programme

Further special emphasis was given to encourage women's role in all the phases of each programme and even to get them to participate as caretakers during the maintenance phase.

4.6.2 Selecting the best Technology Option for Hand Pump

The hand pump technology had to be modified to suit with the requirements of the village level maintenance. Open Top Cylinder versions of India Mark II pumps were introduced in new installations to make the repair & maintenance more simple for the community deviating from the original design of India Mark II. The previous design of India Mark II was dependent mainly on the centralized team for the maintenance as a lifting tackle was required to take the cylinder out for repairs. The new version appeared to be a simple system adaptable at the village level, reducing the dependence on outside agencies.

The use of 75mm Ø PVC riser pipe with glued joints has shown to be more reliable compared to 50mm Ø PVC with threaded sockets which were used in the earlier version of hand pumps. Although the average maximum installation has been limited to 45m, few installations have been made up to 60m on trial basis.

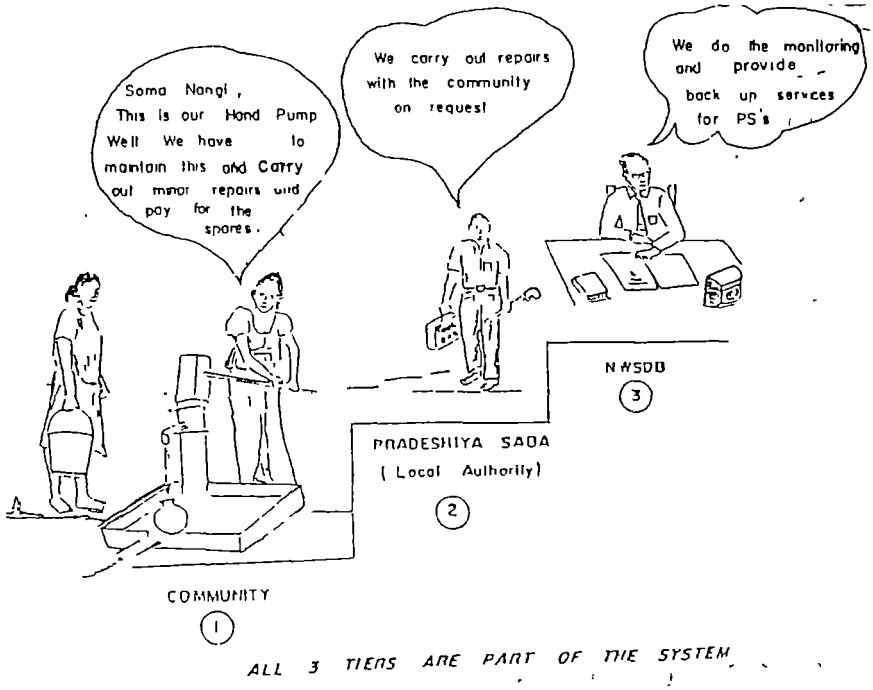


4.6.3 Inputs and Outputs

During the phase II, 478 community hand pump wells have been completed catering a population of 47,800 people in the Kandy district. This was a major achievement compared with the original target of 365 hand pump wells. In addition the project has supported the NWSDB (RSC - Central) to rehabilitate and improve existing pumps installed by the NWS&DB and other agencies within the Kandy district, avoiding new constructions of hand pump wells in the area. The beneficiary community contribution has been increased upto five percent as material, labour and land in kind.

4.6.4 Consolidation of Operation and Maintenance of Hand Pump Wells

A three tier system was introduced at the national level to establish the maintenance system and identify different factors and respective roles in the maintenance. The first tier, the community was responsible for routine operation and maintenance, carry out minor repairs and pay for the repair. The second tier, the local authority was responsible to carry out major repairs with the community and to arrange spares at cost. The NWS&DB as the third tier, was responsible for the general backup service to the local authorities in the form of flushing and redrilling etc., and maintaining spare part storage.



The three tier mechanism seems to be impressive in general appearance but in real life the effectiveness of the system was dependent on the persons in the different organizations. The system shall be further reviewed and modified based on the experience gained during the actual implementation of the mechanism in coming few years.

4.6.5 Building up O&M Fund at PS Level

A voluntary contribution of Rs. 650.00 per hand pump well was raised for each well by the beneficiaries and was deposited at respective Pradeshiya Sabhas. The total contribution in the year 1994 has been risen up to 1.0 million SLRS mark. Most of the Pradeshiya Sabhas have been very effective to raise the voluntary contributions from the beneficiaries at the same time making their own fund contributions.

4.6.6 Revolving Funds and Hand Pump Storage at Regional Level

Hand pump spares which were sufficient for two years operation have been handed over to the NWS&DB Regional Office to establish a revolving fund. Further the project also has made arrangements to provide a storage space required to store spares at the Udunuwara - Yatinuwara intake site.

4.6.7 Local Manufacture of Hand Pump Spare Parts

Action was taken to produce spares at local level after carrying out a detailed feasibility study. This activity was carried out by the Kandy Regional Office of the NW&DB according to government tender procedure with the sole objective of regularizing the spare parts supply in the country.

4.6.8 Removal of Iron and Manganese at village level

Presence of excessive iron and manganese became a major threat to continue the hand pump programme in some parts of the Kandy District. The project was successful in developing a simple iron removal plant utilizing the bacteriological iron removal process. This filter unit has proved to be an efficient low cost technical solution which could be operated and maintained at village level.

The same filter unit also had been successfully utilized for removing manganese in ground water with the change of filter media.

4.6.9 Ground Water Data Bank

The work to establish a Ground Water Data Bank for all the wells drilled by the KDWSSP/HWSSP, has been completed in August 1993. The purpose of the Data Bank is to compile and store all available technical, hydrological and water quality parameters in a data base system for future use in the water sector.

4.7 Sanitation

4.7.1 Back ground and Strategy

The target of the Sanitation programme of the phase II was to complete 8,200 toilets, catering a population of 49,200 in Talatuoya, Yatinuwara, Wattegama, Kundasale and Medamahanuwara and uncompleted areas of the phase I of the programme. The Divisional Director of Health Services and the Public Health Inspectors selected the priority areas for implementation based on incidence of bowel diseases and other waterborne diseases. The most affected villages were taken for blanket coverage due to limitation in funding. The selection of the beneficiaries were based on the poverty level and also the non availability of a sanitary latrine.

Families receiving poverty alleviation assistance and others coming under food stamps system were eligible for applying for the project assistance. However, deviations were made from the above criteria to cater groups who have no latrines.

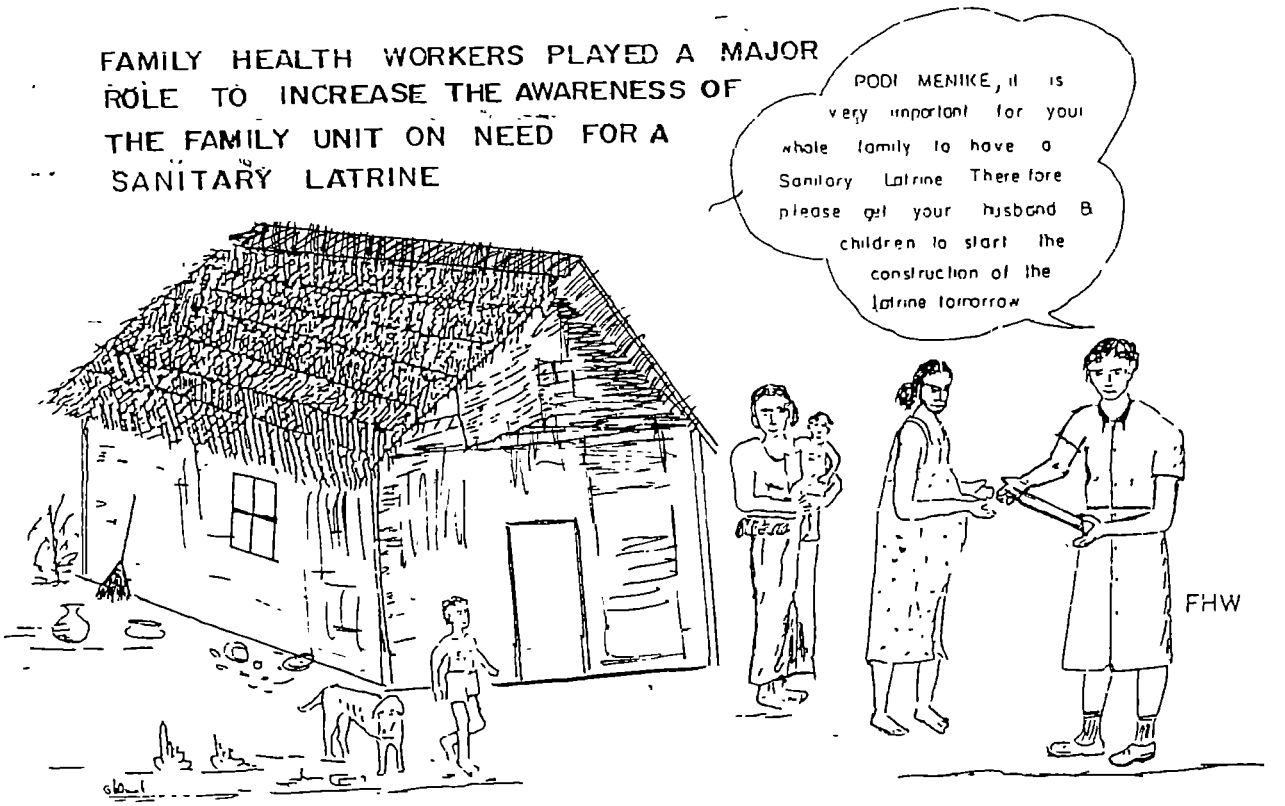
In addition to the village community programme the sanitation programme for the institutions was identified as one of the priority works taken up for implementation. The main objective of the institutional programme was to improve the sanitation standards in the institutions such as schools, hospitals and religious places at the same time becoming the focal point in the village sanitation programme.

4.7.2 Inputs and Out Puts

The double pit latrine was accepted widely by both recipients and programme officers as it had proven as an environmentally friendly design. The unit cost of a latrine was further reduced during the phase II of the project with some design modifications. The two circular dome type cover slabs in the original design needed centralized casting yard for production and was costly and very heavy in transportation. The new design of rectangular cover slabs could be cast at insitu by the beneficiaries.

Under the project assistance the recipients were provided with only the squatting pan, P trap and earthen ware pipes with the subsidy payment. The recipients were encouraged to select low cost designs for the super structure of the toilet as sixty percent of the cost of the works were borne by them.

During the phase II, the rate of completion of the latrines by the beneficiaries has decreased remarkably compared to the phase I. This was mainly due to the average low poverty level of the beneficiary families. In many cases the priority of the family unit had been earning a living for the day than constructing a toilet. The grass root workers in the department of Health and the health volunteers played a major role in handling this situation. The wife in a Sri Lankan family has strong role in family decisions. In this connection family health workers were mobilized to pursue the women members of the family on importance of having a toilet and also it's effects on the life cycle. This has resulted many poor families driven forward to construct their own latrine with the project assistance.



Department of Health Services has provided material support for 9,000 toilets and out of this 8,459 toilets has been completed. The project contribution towards this programme has been only 10 million SLRS. and whereas beneficiaries had contributed 15 million SLRS. as labour and material in kind.

4.7.3 Sustainability

The sustainability of the improved sanitation facilities has guaranteed the increased level of commitment of the recipient communities and the relevant agencies.

The approach adopted during the phase II has been making recipients to design and construct their own toilets with only technical guidance and limited financial assistance from the project. In many cases the recipients have prepared and collected construction material for their latrine with a strong determination to own a improved system. The use of a sanitary toilet has become an essential feature of the community life which is a remarkable change in the behavioral pattern during the last two decades. Also this has made them to understand that the safe excreta disposal is an essential component in life, ensuring future sustainability.

The second issue of sanitation programme and the level of subsidy is of prime importance for the rural population. The very little sanitation subsidy of only Rs. 1,500/- maintained by the Ministry of Health in the programme at the national level in the other parts of the country was a continuous topic during phase I and II of the project. On the other hand it was observed that this programme at national level reaches only an economically narrow sector of population without benefitting the people in the greatest need.

In this connection reviewing of existing subsidy scheme for sanitation programme at national level needed to be carried out as an urgent priority in order to reach the poorest segments of the society and at the same time to achieve the ultimate sector coverage in the country.

4.8 Health Education

4.8.1 Strategy

With the integration of the Health Education Programme to the Department of Health Services, the programme strategy was modified at the grass root level, obtaining priorities and experience from all the corners. The Health Education Programme facilitated the main objective of educating and changing the behaviors of the people to improve their health habits, at the same time ensuring sustainability of improved water and sanitation facilities. On the other hand this programme had created demand for new water and sanitation facilities among the communities in new areas.

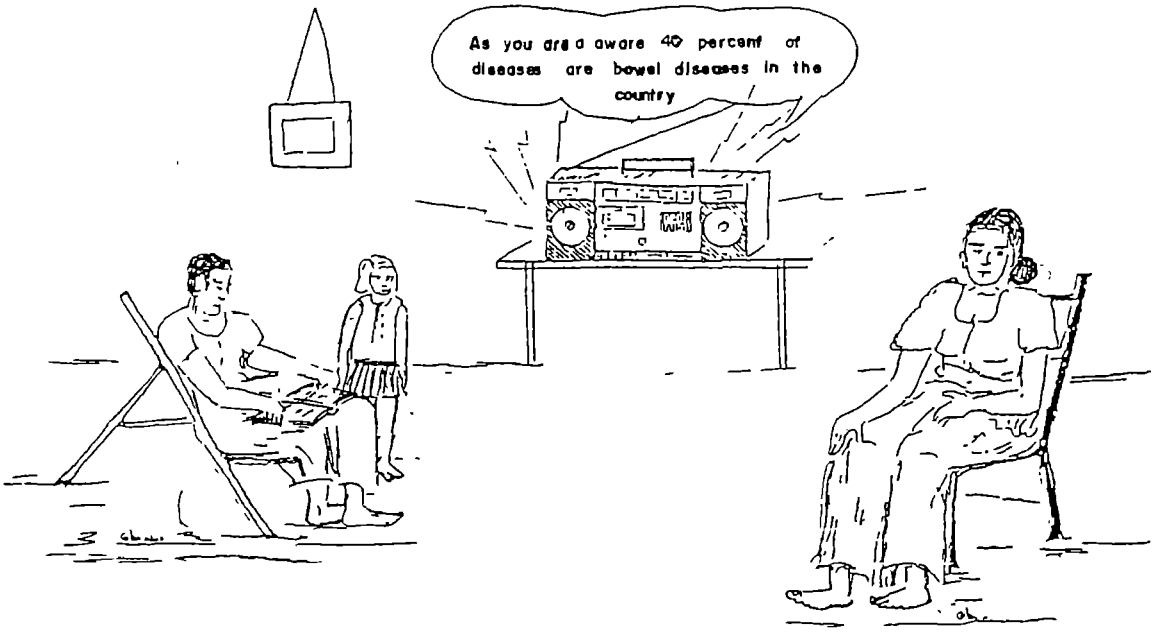
The Department of Health Services was provided with technical and material assistance to carry out training and health education programmes at the district level, the divisional level and the village level. The Health Education Unit in the HESU under the guidance of the expatriate Health Education and Sanitation Advisor was involved in planning, implementation, monitoring and follow up of the Health Education Programme.

An integrated approach was used at the divisional directors level where the school children, health officials and the community of the area were jointly involved in the planning and implementation of Health Education Programme. The emphasis was placed on the involvement of beneficiary community through community leadership and field level health workers. The existing community based organizations, non governmental organizations and village level action committees have been extensively used in mobilizing community resources in Health Education. The health volunteers at village level played a key role in this exercise mobilizing the community through the community level action programme for Health Education. In addition, school children were identified as potential "Change Agents" to influence the family units.

The emphasis of the programme was to make an impact on the health habits at family level in order to bring about the change of behavior patterns to attain correct health habits.

4.8.2 Inputs and Outputs

The Health Education Programme were carried out as per the action plan prepared for the project period. This consisted the community health education programme, school and pre school education programme and hospital education programme.



THE WEEKLY BROADCAST "SUWA SANDELLA" COVERED WIDE SPECTRUM OF THE POPULATION IN THE DISTRICT CARRYING EFFECTIVE HEALTH EDUCATION MESSAGES TO THE FAMILY LEVEL.

In addition the "Suwa Sandella" weekly programme reached people even outside the district, carrying valuable health messages to their door step among many other programmes. The total expenditure in health education was 10 million SLRs., during the project period. Although the expenditure of the programme seems to be high the major share of the expenditure had been allocated for material and equipment support in order to strengthen Divisional and grass root level capacity to extend the health education to rural communities in future.

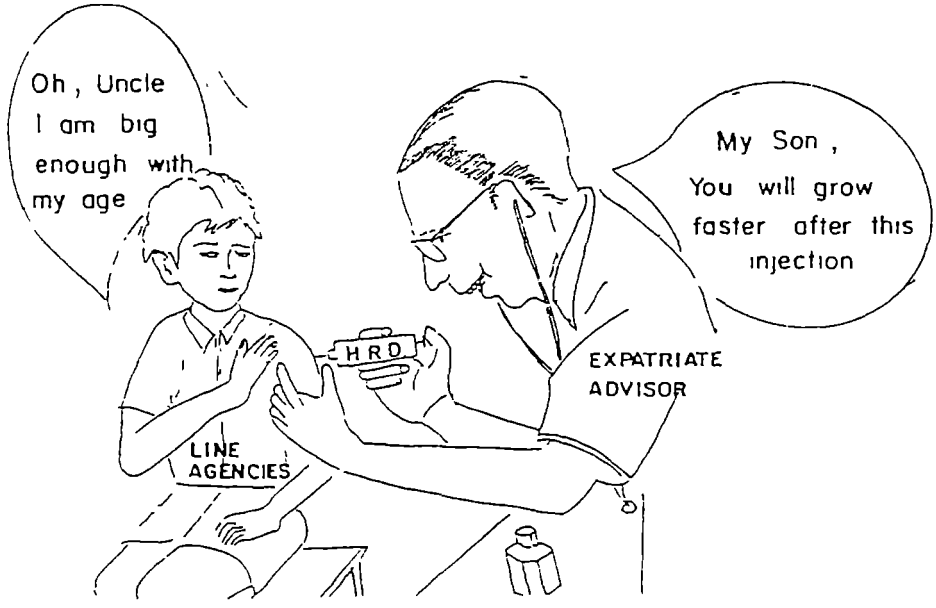
Surveys and studies were carried out to monitor and review the success of the programme and to find out any changes required in the implementation strategy in future.

4.9 Institutional Support

The main thrust of the project activities was placed on development of operational capabilities of the local institutions in the sector and consolidation of existing systems. The institutional support programme was launched as a parallel programme activity to stimulate capacity building in the respective sector institutions. In this respect three main key areas were identified viz human resources development, provision of logistical support and system development with technical and material support, for institutional development and capacity building.

a) Human Resources Development

The Human Resources Development Programme did not progress effectively due to many reasons such as changes of the expert personnel from the beginning. Therefore, the basic concepts of the HRD did change from time to time during phase I and II with the experts, until the entire programme had to be redeveloped in the year 1992. Also the appointment of a suitable HRD Consultant by the NWSDB as a counterpart to the HRD Advisor took time, and affected the progress of the programme during the balance period.



A management skill development programme was identified by the respective managers from the line agencies as one of the most prioritized activity under the HRD programme. The issue on extent of progress had two versions where the Expatriate Advisors thought that M/L skill development should complete within a short period and the progress is not sufficient. On the other hand the senior managers in the agencies concerned, felt that the M/L skill development could not be achieved overnight and needs a gradual change of managerial skills and attitudes and cannot be imposed artificially on the persons. This conflict of ideas continued during the project period and the HRD programme progressed with it's own speed in real life.

However, both the NWS&DB and the DHS have identified the Human Resources Development programme as one of the important programmes in their own development activities.

Training has been identified as a major component of the Human resources Development Programme. One of the main deficiency found in the programme has been lack of training skills among the trainers and lack of training Institutions for conducting training programmes. The project embarked on a special programme to arrange training of trainers programme(TOT) for developing training skills among the trainers of the line agencies. Further a study has been carried out by the project to assess the training capacities within the institutions in Kandy. A individual training plans were developed in each agency based on the institutional needs.

Training manuals were redeveloped for each training activity based on the systematic approach and task analysis of the target category. The most significant development in this regard is increased training capacities of the sector organization to continue the sector training in future with the development of training manuals, equipments and trainers.

b) Provision of logistical support

RSC Building - The RSC building constructed under the USAID programme became too small nearly two (2) years after the completion of the building. It has been required to consider construction of a completely new building with the process of ongoing decentralization within NWS&DB. A new building has been designed under the project activities taking in to consideration future expansions of the NWSDB regional setup for next 20 years. The KDWSSP funded the stage I of the construction and was completed in April, 1994. Subsequently the NWS&DB allocated additional money and commenced stage II of the works which shows continuity of the momentum of the development and the thrust on capacity building after withdrawal of the donor.

NWS&DB IS COMMITTED ON CAPACITY BUILDING EVEN AFTER WITHDRAWAL OF THE DONOR

Meter Repair Work-shop

The project completed a meter repairing and testing facility in Kundasale to cater the needs of the water sector both in NWSDB and local authorities covering the entire RSC - Central area. Since this will be the only ultra modern facility available in the island for testing and repairing of meters outside Colombo, this will support the water utilities in the other parts of the country to minimize non functioning water meters.

Staff Quarters

The project provided five (5) staff quarters during the period for the effective mobilization of the key personnel in Regional Office for operation and maintenance activities.

Laboratory and Work-shop

Both the laboratory and the workshop has been integrated those with the RSC units. These units have become functional units within the NWSDB regional office, Kandy making a remarkable improvement in the NWS&DB operations within the RSC area.

Stores facilities for local authorities

All the local authorities in the project area were identified for a stores development programme. The beneficiary institutions had to plan, design and construct their own stores with partial financial assistance from the project. This has been a major development in the local authorities where the institutions concerned became the major partners in improving their own logistics which guarantee long term sustainability of the improved facilities.

c) System Development

During the phase II the main recipient under this programme was the regional office of the NWS&DB. The technical assistance was provided to the Regional Office through the expatriate O&M Advisor and a short term Electrical Advisor. The Regional Office has launched preventive maintenance programme as an immediate priority. The preparation of O&M manuals for the schemes constructed has been completed simultaneously.

"Customer care" has been one of the priority areas which required development within NWSDB. The emphasis was placed on creating a customer friendly atmosphere in the final layout of the RSC building, during design and construction phases.

The Regional Office Kandy also recorded achieving all the targets for collection from the consumers compared with the other regions in the Island in the subject of billing and collection.

Further, technical advise was provided through the O&M support unit of the project to several local authorities to strengthen operation and maintenance capabilities and implementation capabilities of new water facilities. This programme included both class room training as well as on the job training.

Implementation of many rehabilitation programmes of water schemes through the local authorities made an considerable impact on the capacity of the institutions. During this exercise role of the project was limited only to control the budget and provide technical assistance, where as the beneficiary institutions had to shoulder the entire implementation responsibility.

Tariff Development for Viability

System deterioration of the water schemes over many years was a common feature due to lack of staff, or lack of financial resources or complete negligence of the systems during the maintenance. This problem is quiet evident in almost all local authorities and due to this reason the new investments had to be diverted to the existing water schemes without taking up new target groups. The project introduced a new approach to breakup this vicious circle in order to achieve financial viability and at the same time stimulating the role of the consumer and the maintenance agency.

The main philosophy in this exercise has been recovering the running costs and part of the investment costs directly from the users through a scheme specific tariff. This procedure has screened out many unviable schemes during the planning stage in the project. This also has resulted the project to select the most cost effective technical solutions and the extent of the water tariff was governed by the real market forces in the locality.

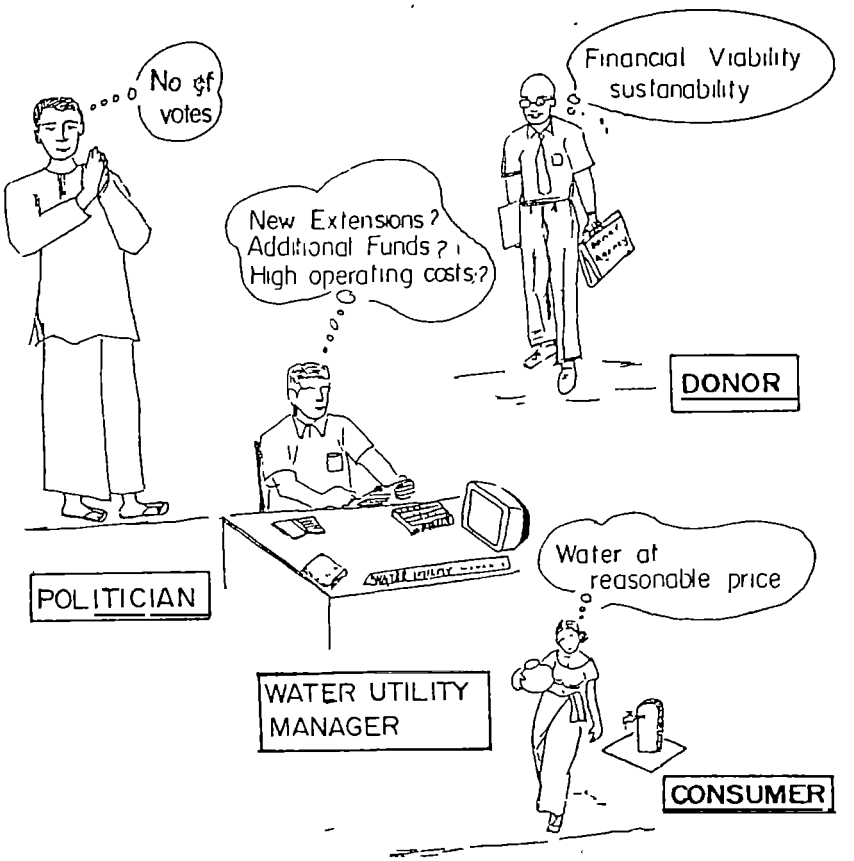
However this concept is really in contrast to the tariff policy adopted by the NWSDB. The national level policy is based on cross subsidies where the financial viability is considered only at national scale.

This programme faced many criticism among conventional water engineers, politicians and some sections of the recipient community during the early days of implementation. However, with the strategies adopted by the project to pursue all the categories of personal concerned the works could be completed as expected. One of the important feature in this exercise has been bringing some kind of improvement to the system with the increase of the tariff. A rehabilitation programme was planned by the local authority for each scheme with the technical and material support from the project.

The tariff development exercise was first started in Ampitiya on pilot level during the phase I of the KDWSSP. This programme was extended to other areas of the project during the phase II, establishing viable tariffs in 18 more water schemes.

It has been always necessary to achieve consensus among the consumers, maintenance agency, politicians and the donor agency balancing various requirements from the all corners in carrying out this exercise.

For the funding agency or the government, the most important requirement is the sustainability of the improved system. Therefore all efforts are needed to ensure that a particular system is financially viable and all the resources are available for the future up keep of the improved system.



The consumers wanted a satisfactory water supply for an affordable price. Some consumers wanted to have their houses connected to the piped water supply system and the others were satisfied with having only point sources at close proximity. The consumer was ready to select the most appropriate technology and pay for the consumption based on his level of affordability.

For the consumer, any escalation of water prices could only be justified with the increase of level of service.

The politicians as the peoples' representative have to safe guard community interest without loosing the popularity. If the prices go unreasonably higher against the wishes of the people there will be a resistance developed which will be surfaced through the politicians. The old belief among the people was that the "water is a free gift from the god". The politicians believed that it is the government duty to provide piped water to people free of charge. Therefore, any attempt to raise the water tariff has been always adversely resisted by the politicians in fear of loosing of the popularity. The main lesson learnt in the exercise has been that politicians pay a major role in matters of tariff development and need of their existence has to be addressed, without disturbing the existing political echo system.

On the other hand the maintenance agencies are always pressed with many problems such as price escalation of electricity, chemicals and labour and material to run the water systems. Day by day the management finds it difficult to maintain the system as a result of budgetary limitations. Also despite of many operational problems in the existing service areas there is heavy pressure from the consumers and the politicians to extend the services to new areas or new target groups.

It is obvious from this exercise that tariff development could be introduced successfully if the issues of all corners are properly addressed and looked in the development programme.

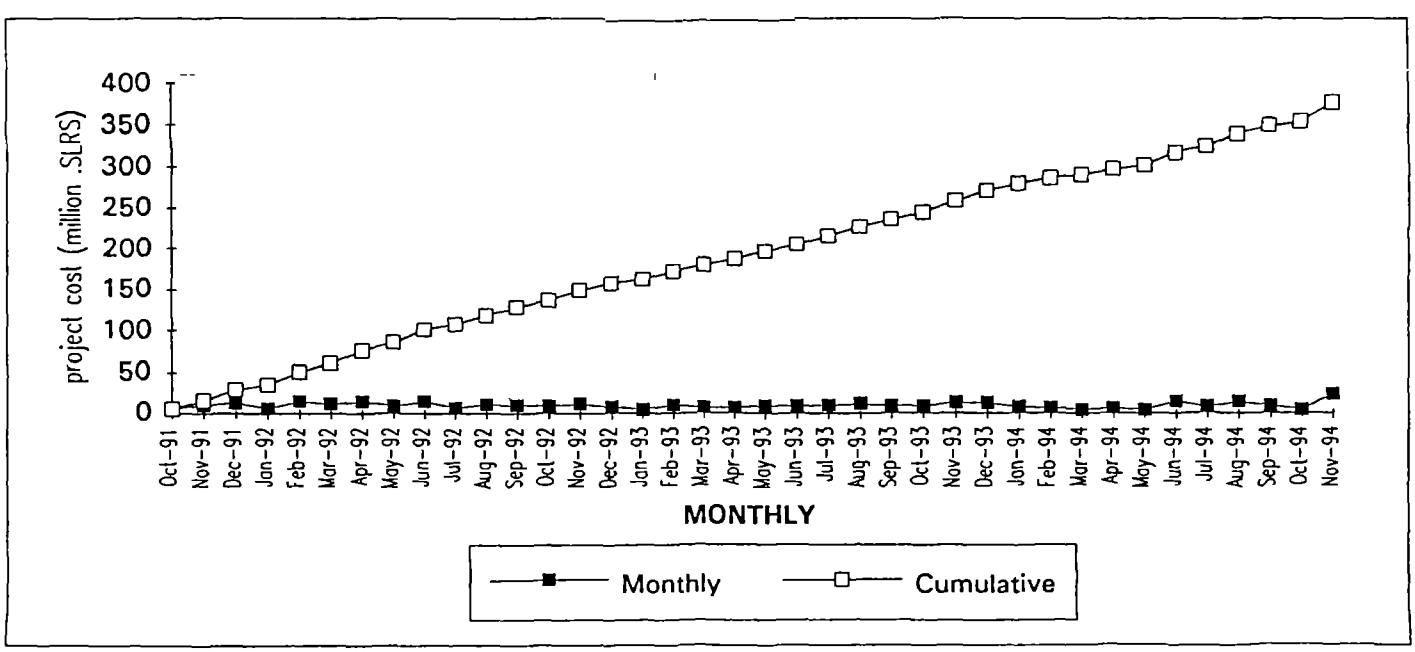
5. FINANCIAL PERFORMANCE

5.1 General Performance

According to the original programme for phase II of the Project the total Finnish contribution was 35.015 million FIM and whereas the local contribution was 69.342 million SLRS. Subsequently, in October 1993 as per the agreement between the two countries the project programme was extended up to end of November 1994 and the budget was revised with an additional fund commitment of 25 million SLRS from the NWSDB as a realized cost for the assets and materials that will be taken over by the NWSDB. The Ministry of Health and Women's Affairs is committed to release additional funds for the implementation of the Health Education and Sanitation Programme due to the extension.

The total Project cost during the phase II were about 378 million SLRS being about 90% of the budget. There are two main reasons for the low level of the disbursement. One reason was the exchange rate variation from 11 RS/1 FIM at the planning stage to 8 RS/1 FIM during the Project period. This has reduced the total allocation of the foreign component in Srilankan Rupees.

Financial Performance during Phase II



The other main reason was that the unspent annual allocation were not considered to be carried forward for the subsequent year by the donor agency Finnida.

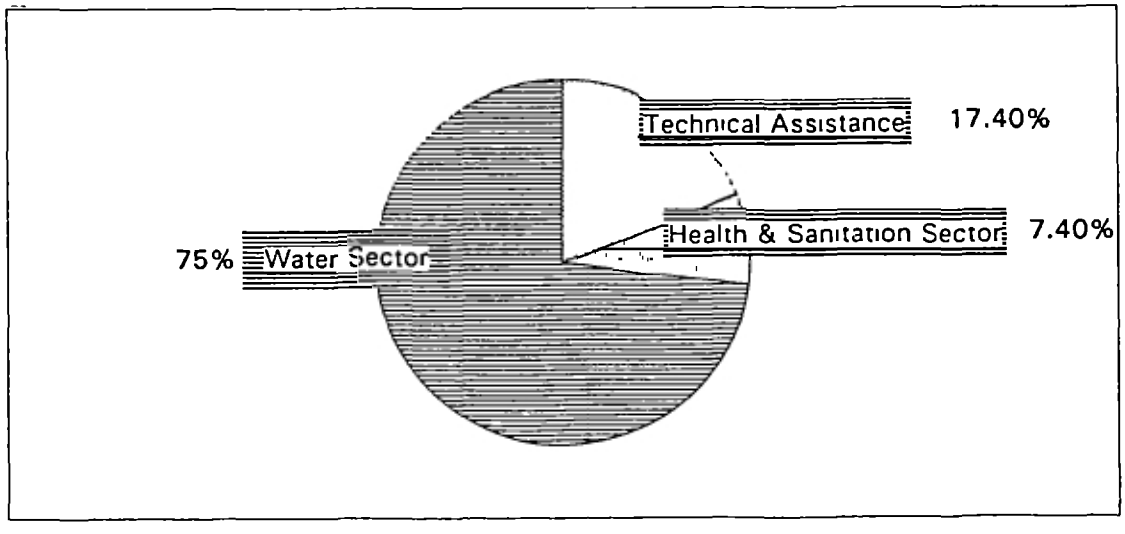
The overall financial performance indicates a reduction in the monthly disbursement rate in July 1992. This rate has caught up only after one year. This is a clear indication that consolidation phase was not sufficient enough to match with the capacity of the institutions and the relevant procedures.

5.2 Sectorwise expenditure

The disbursement of the water sector was 284 million SLRS which is 75% of the total project costs. The disbursement of the health education and sanitation sector was about 28 million SLRS which is only 7.2% of the total project cost whereas the costs of the Technical Assistance was 66 million SLRS which is 17.8% percent of the project cost.
(More details are presented in Appendix 18)

TOTAL PROJET COST

WATER SECTOR	284	MILLION S L R S
HESU	28	MILLION S L R S
TECHNICAL ASSITANCE	66	MILLION S L R S
	378	



It also can be seen from the calculation that in the water sector the local component contribution was 29 percent from the budget. The health sector contribution is only 26 percent from the budget component.

5.3 Cost of Water

The unit costs are calculated on the basis of average total costs involved as material, labour and administrative costs in the programme. These figures can be taken as the base information for planning of future projects and as financial indicators to assess the success of project. However, the cost of the technical assistance is completely excluded in this exercise.

a) Cost of a hand pump well - 1000 SLRS/person

b) Cost of the augmentation/rehabilitation of a medium size water supply scheme - 1375 SLRS/person

c) Cost of the construction of a small scale gravity scheme - 2000 SLRS/person

d) Rehabilitation of a small scale gravity scheme - 500 SLRS/person

e) Material support to construct a latrine - 833 SLRS/person

6. LESSONS LEARNED AND RECOMMENDATIONS

6.1 General

The lessons learned during the Kandy District Water Supply and Sanitation Project are particularly significant for any such future development programme in the water and sanitation sector. These can be taken as guidelines in development programmes to be implemented in the country in future to achieve sector coverage.

6.2 Institutional Aspects

6.2.1 Mode of Implementation

This topic has been discussed in the previous sections of the report, but is considered in a greater detail here as one of the important considerations that should be made when planning future development programmes. The main feature observed in many bilateral development programme started in 80's, is the presence of a huge separate project unit outside the line agencies. The water and sanitation project in Kandy was not an exception to this situation. The implementation was carried out through a project unit managed by a Finnish Consultant Company.

According to the Sri Lankan experiences the project units established outside the line agencies always have been creative and efficient with an added feature of flexibility. These have delivered the goods within the shortest possible period but has retarded the growth of the line agencies in the sector. The project objectives and goals were of short term nature and the project units were artificially efficient to fulfil these situations. In many bilateral aid programmes implemented in Sri Lanka this has resulted in a huge vacuum at the end of the project discontinuing the whole development cycle for some time.

The decision taken to integrate the KDWSSP activities to the line agencies was a remarkable milestone in the march towards the long term sustainability within the sector. The integration process made a considerable impact on the procedures and methods within the agencies at the same time ensuring effective technology transfer. Both the resources as well as experiences were shared between the different sections. Although the completion rate slowed down after the integration process the entire works were completely planned and implemented by the relevant agencies.

However, from the project experience it can be seen that the best long term results can be achieved with a small project unit outside the agencies to guide and take care of the programme and the funds are channelled through the sector agencies.

6.2.2 Matching the capacity and the rate of implementation to ensure sustainability in future

It is very essential to clearly define different roles of various agencies in the future maintenance and upkeep of the facility before embarking on any development programme. In Sri Lanka one of the biggest mistake observed in many bilateral development programmes started in 80's has been to gear to full scale implementation in the absence of a clearly defined maintenance policy. The capacity of the local agencies who will finally take over the maintenance were never assessed before deciding the scale of the implementation. Finally, the local agencies were forced to take over the improved facilities which were out of their capacity in terms of maintenance and management.

The strategy adopted during the phase II of the KDWSSP was to match the rate of the implementation with the absorption capacity of the relevant institution. The project programme withdrew from some areas or the scale of work was reduced until the particular institution proved their readiness and willingness to under-take the maintenance. The relevant agency for the maintenance of the facility was involved in the whole process from planning to implementation phases with the beneficiary community, in order to ensure, that it is their own system rather than one which was forcefully imposed on them. This strategy derived very good results in ensuring the institutional commitment for the future sustainability.

The degree of the institutional capacity was assessed with the factors such as availability of human resources and budget allocations for maintenance within the organisation, commitment to undertake works, and flexibility to absorb new things.

This procedure has eased the project to screen out weaker institutions. This has also enabled the KDWSSP to avoid the concentration of the implementation in one single area, extending the programme to other parts of the district. The main lesson learnt in this exercise has been that phase of development has to be planned only in par with the growth of institutions.

6.3 Community participation for sustainability - What are the Limitations?

During the project period the community participation was extensively utilized in the whole process of the project cycle from planning to the implementation and maintenance phases. The beneficiaries were actively involved in flow measurements, resolving land issues, deciding on locations of point sources during the planning stage. In the construction phase the beneficiaries contributed in terms of labour and material in kind and finally volunteered to operate and maintain their own systems with their own funds and labour. The strategy of the implementation was focused on transferring the ownership of the facility to the community making them the real owners of the improved facility.

From the follow-up studies it can be seen that in the average, level of the liveness of the community dies off with the establishment of a smooth maintenance system. The tendency of the beneficiaries is to postpone the maintenance and allow the system to deteriorate gradually.

A water and sanitation programme within a society seems to be active in the beginning and fades away after 6-8 months. Also it can be seen that when break downs occur quiet frequently and maintenance becomes a nuisance, the beneficiaries tend to neglect their improved sources and divert to the traditional polluted sources. However, these trends in the community, are changing from place to place with the scarcity for water.

It can be concluded that in full scale community managed systems it is impossible to achieve sustainability in long term and there is a great need for constant Agency intervention to monitor and provide back-up services to ensure the sustainability of the improved systems. In this connection it is important that the present 3 tier system will be continued, monitored and reviewed to achieve the long term sustainability.

6.4 Tariff Development - Is it impossible?

The viability has been a pre-requisite for any new implementation or rehabilitation of a water scheme under the project assistance.

The experience gained during the project period over a very few years has shown that it is possible to increase the water tariff on scheme specific basis to achieve the system viability. The main contributory factor to determine the level of the tariff has been that the market forces prevailed in the particular area. It is also very important to convince the local level politicians through the beneficiaries to raise the tariff along with the system improvements.

Different tariffs, even three times higher than the national tariffs, were successfully introduced in 18 water schemes in the project area.

The important aspects are the need for the improved level of service and the need for a strong institution to carry out maintenance in order to maintain a high cost recovery.

THE REPORTS PREPARED BY KDWSSP DURING PHASE II

1. Water Supply Master Plan for Greater Kandy - KDWSSP

2. Environment Impact Assessment for the Water Supply Master Plan for Greater Kandy
September 1994 - Resource Organization & Management International (Private) Ltd

3. Udu/Yatinuwara Water Supply Scheme - Improvements in Transmission Main
Phase II - W M S K Menikdiwela

4. Report on the Hydrogeological Investigations at Gannoruwa Well Field
September, 1992 - T P Karunaratne

5. A Comparative Study of Quality of Water in Traditional Bore hole and Shallow Wells in Kandy District *for* First South Asia Geological Congress, Pakistan
1992 - J P Padmasiri/U de S Jayawardena

6. Method of Low Cost Surface Water Treatment for River Intakes *for* Water Malaysia
October 1992 - J P Padmasiri/S G Ginige/T Liyanapatabendi

7. Removal of Iron and Manganese from Ground Water using Laterite and Sand
for Chemistry in Sri Lanka Vol. 9 - 1992, Institute of Chemistry
1992 - J P Padmasiri/M A S L Attanayake/O A Illeperuma

8. A Study on the Groundwater Quality of Metamorphic Terrain in Kandy District *for* 29th International Geological Congress
September 1992 - U de S Jayawardena/J P Padmasiri/J Kotuwegedara

9. Study of Groundwater Pollution from Double Pit Latrines *for* 18th WEDC Conference, Nepal)
September 1992 - J P Padmasiri/G M Jayatilake/J Kotuwegedara

10. Evaluation of Aquifer Characteristics of Ground Water Resources in Harispattuwa *for* Geological Society of Sri Lanka
January 1992 - G M Jayatilake/J P Padmasiri/D G S W Pitakumbura

11. Problems and Remedial Measures to Improve the Quality of Water in Hand Pump Wells in Kandy District *for* Sri Lanka Association for the Advancement of Science
December 1993 - J P Padmasiri/C B Dissanayake/R P Gunawardena

12. Some Biological problems associated with water purification at the Tisawewa Tank in Anuradhapura *for* Sri Lanka Association for the Advancement of Science
December 1993 - S A Kalansooriya/B P A Jayawardhana/J P Padmasiri/W S C A Fonseka

13. An appropriate iron removal technology *for* 20th WEDC Conference in Sri Lanka
August 1994 - M A M S L Attanayake/J P Padmasiri

14. Algae Removal by Roughing Filter *for* 20th WEDC Conference in Sri Lanka
August 1994 - J M J C Jayalath/J P Padmasiri/S A Kulasooriya

15. Low Cost Flouride Removal *for* 20th WEDC Conference, Sri Lanka
August 1994 - J P Padmasiri/W S C A Fonseka/T Liyanapatabendi

16. Feasibility Report of Mudaliwatte Gravity Water Supply Scheme.
March 1993 - T.B.G. Dissanayake

17. Feasibility Report of Alagalla Gravity Water Supply Scheme.
March 1993 - T.B.G. Dissanayake

18. Feasibility Report of Aswayawetunakandura Gravity Water Supply Scheme.

19. Feasibility Report of Kadaturawa Water Supply Scheme.

20. Feasibility Report of Pengirimanna Gravity Water Supply Scheme.

21. Evaluation and updating of Design Criteria - Volume I
June 1993 - P. Kulatunga

22. Evaluation and updating of Design Criteria - Volume II
June 1993 - P. Kulatunga

23. Evaluation and updating of Design Criteria - Volume III
June 1993 - P. Kulatunga

RECORD ON HIRING OF SUB-CONSULTANCY SERVICES

	SERVICE	SUB CONSULTANTS	COST SLRS
1.	Contract for Design, Preparation of Drawings, Bill of Quantities, Tender Documents for Welamboda W.S.S. T&C/KDWSSP 743/92	Nihal Rajapaksa Consulting Engineers	231,245.00
2.	Staff Quarters for Engineers, OICC', Pump Operators and Caretakers RSC Building	Kahawita de Silva & Associates	35,000.00
3.	Sub consultancy Contract for Design, preparation of drawings and Tender documents for the proposed R.S.C. building	Kahawita de Silva & Associates	780,389.66
4.	Monitoring settlements of R.S.C. building at Getambe	Institute of Surveying & Mapping	100,000.00
5.	Environmental Impact Assessment for Water supply Master Plan for Greater Kandy	Resource Organization & Management International (pvt) Ltd	450,000.00
6.	Interior Decoration for the proposed R.S.C Building	Kahawita De Silva & Associates	85,000.00
7.	Consultancy for Hydrogeological Studies	Mr. H. Dharmagunawardhana	100,000.00
8.	Hiring of Surveyors on Surveying and levelling	Mr. M. Munasinghe/Mr. T.U. Wijesinghe	200,000.00
9.	Draughtsman Services	Ms. Dilrukshi Polpitiya	2,000.00
10.	Maintenance of Computer Software	Excell, Kandy M.S.L., Kandy	4,000.00 99,000.00
11.	Consultancy on Foundation (RSC building)	Prof. L. Tennakoon	5,000.00
12.	Consultancy on Foundation (RSC building)	University of Peradeniya	19,000.00
	TOTAL		**2,110,634.70**

WORKS CARRIED OUT UTILIZING LOCAL CONTRACTORS

CONTRACTOR	CONTRACT	DURATION	COST SLRS.
1. Multi Engineering Services	Tennekumbura WSS	24.01.93 - 25.04.93 (03 months)	404,920.60
2. Multi Engineering Services	Kundasale WSS Sump & pipe laying	05.02.93 - 31.05.93 (04 months)	368,217.38
3. Central Engineering Associates	Tennekumbura WSS	02.02.93 - 02.05.93 (03 months)	410,779.83
4. Central Engineering Associates	Udu/Yatinuwara WSS Kandy Colombo Road	15.06.92 - 22.01.93	1,305,917.50
5. Nirmana Builders	Ampitiya Rehabilitation	17.12.91 - 15.09.92	2,837,586.31
6. Dissanayake & Co. Ltd.	Udu/Yatinuwara WSS Wijetunga Mawatha	26.03.92 - 15.12.92	509,370.43
7. E.J. de Silva & Sons	Udu/Yatinuwara WSS P.O. Quarters Eriyagama	11.03.92 - 11.07.92 (04 months)	287,419.94
8. E.J. de Silva & Sons	Udu/Yatinuwara WSS P.O. Quarters Prospect Hill	11.03.92 - 11.07.92 (04 months)	282,920.20
9. Paramount Agencies Ltd.	Akurana WSS	05.01.93 - 22.03.93	274,200.12

WORKS CARRIED OUT UTILIZING LOCAL CONTRACTORS

CONTRACTOR	CONTRACT	DURATION	COST SLRS.
10. Brown & Co. Ltd.	Kondadeniya, Gohagoda, Kulugammana WSSs (HC1)	17.03.93 - 17.06.94 (15 months)	15,500,000.00
11. Brown & Co. Ltd.	Halloluwa and Gohagoda WSSs (HC2)	17.03.93 - 17.06.94 (15 months)	20,000,000.00
12. Brown & Co. Ltd.	Bokkawela WSS (HC3)	28.03.93 - 28.01.94 (10 months)	8,000,000.00
13. Central Engineering Associates	Tennekumbura WSS	01.04.93 - 01.07.93 (03 months)	557,635.54
14. State Engineering Corporation	RSC Building	30.03.93 - 30.03.94 (12 months)	9,907,547.89
15. SPC Contractors	Meter Cubicles, Bokkawela, Gohagoda Kondadeniya	05.02.93 - 20.03.93 (1½ months)	103,205.27
16. Wijaya Contractors	Daulagala - Buwelikade Road	11.02.94 - 11.05.94 (03 months)	652,894.53
17. Wijaya Contractors	Mampitiya Hospital Road	13.12.93 - 13.03.94 (03 months)	807,263.97
18. B.A.P. Enterprises	Owissa Booster	15.06.94 - 15.09.94 (03 months)	221,187.10

WORKS CARRIED OUT UTILIZING LOCAL CONTRACTORS

CONTRACTOR	CONTRACT	DURATION	COST SLRS.
19. R.V.N. Peiris	Bulk Meter Testing Yard	20.07.94 - 20.08.94 (01 months)	47,075.00
20. Central Construction Engineers	Ampitiya Balance Civil Work	28.07.94 - 13.08.94	19,520.00
21. Wijaya Contractors	Kadaturawa Gravity Water Supply Scheme	01.07.94 - 01.10.94 (03 months)	447,441.60
22. Promodaya Contractors	Aswayawetunakandura WSS	01.08.94 - 01.11.94 (03 months)	607,026.50
23. Central Engineering Associators	Harispattuwa Extensions	25.07.94 - 25.11.94 (04 months)	10,639,610.00
24. Genstar Engineering	Alumnium partitions to RSC building	11.04.94 - 11.05.94 (01 months)	599,672.00
TOTAL			74,791,411.71

MATERIAL SUPPORT FOR INSTITUTIONAL DEVELOPMENT
(IN SLRS.)

Item \ Local Authority	AKURANA	AMPITIYA	GALAGEDARA	BARIGAMA	KUNDASALE	MEDADUMBARA	KMC
Hand Pump Spares	189,562.84	537,328.53	1,314,489.62	418,140.41	172,750.59	24,480.00	
Tractors/Trailers	148,000.00	108,700.00	292,519.00	108,700.00	108,700.00		
Drawings	-	2,400.00					
Water Meters		664,800.00					
Sanitation		47,250.00	662,755.00				
Manuals		14,000.00					
Tools & Equipment	7,350.00	488,536.50	93,321.00	7,350.00	167,650.00	145,708.00	1,351,000.00
Motor Bike		241,489.00	794,489.00		24,000.00	46,000.00	
Computers		213,810.00			127,000.00		
Total	**344,912.84**	**2,318,313.53**	**3,157,573.62**	**534,190.41**	**600,100.59**	**216,188.00**	**1,351,000.00**

Page Total = SLRS. 8,522,278.99

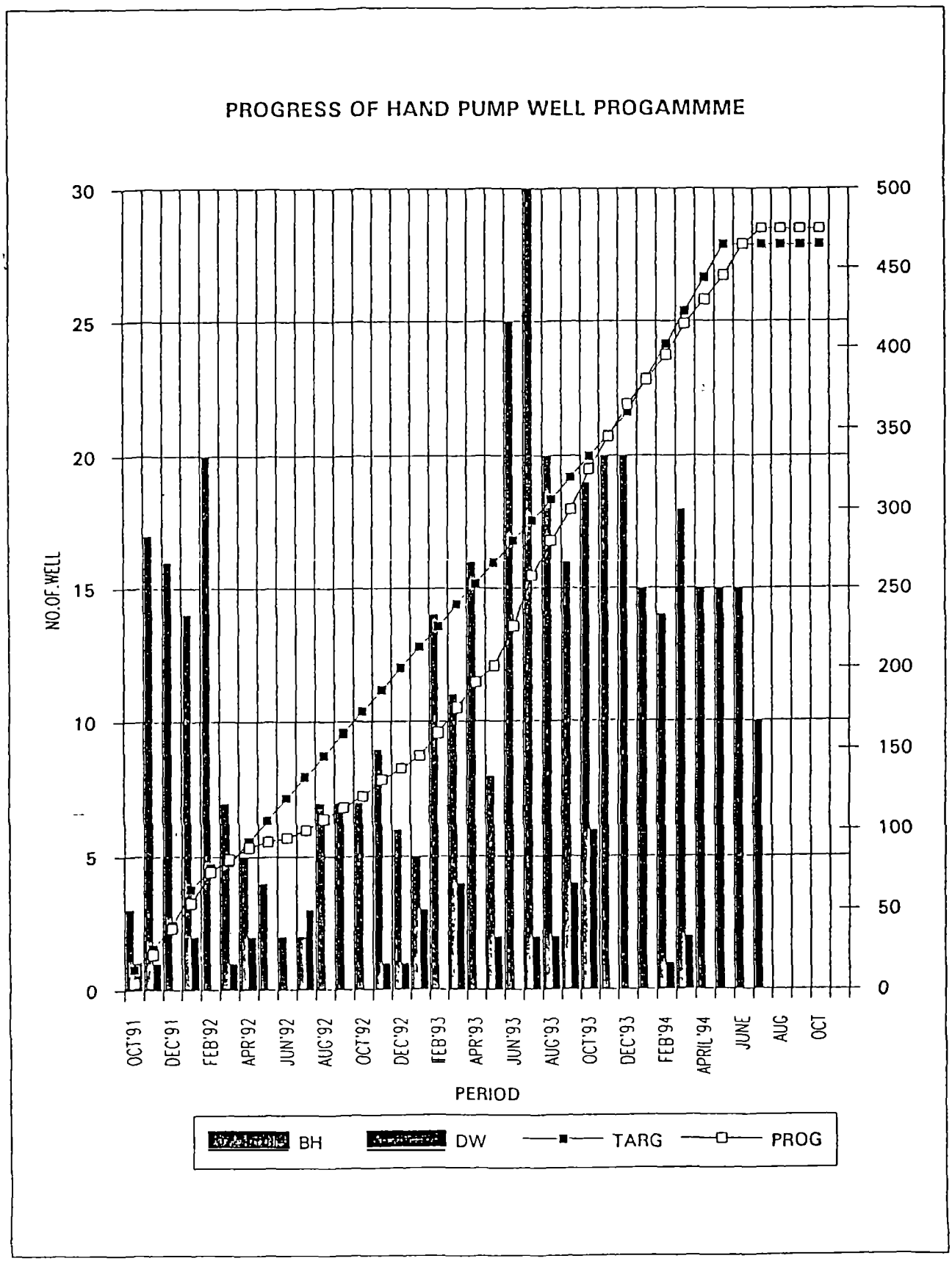
Item \ Local Authority	PATHADUMBARA	PUJAPITIYA	PATHAHEWAHETA	UDUNUWARA	YATINUWARA	RSC
Hand Pump Spares	106,215.00	547,448.59	30,480.00	252,310.00	14,295.00	10,603,069.00
Tractors/Trailers		108,700.00				124,651.00
Drawings						108,800.00
Water Meters	312,000.00		552,000.00			540,000.00
Sanitation						99,530.00
Manuals						36,520.00
Tools & Equipment	353,215.00	1,610.00	15,158.00	20,755.00	55,978.00	5,768,236.00
Motor Bike	60,000.00		32,900.00	32,900.00	24,000.00	381,400.00
Computers						504,646.00
Total	831,430.00	657,758.59	630,538.00	305,965.30	94,273.00	18,166,852.00

Page Total = Rs. 20,686,816.89

GRAND TOTAL = Rs. 29,209,095.88

DETAILS OF TRAINING ACTIVITIES CARRIED OUT DURING PHASE II

S/N	NAME OF THE TRAINING COURSE	PRADESHIYA SABHA	NO. OF TRAINING PROGRAMMES	NO. OF PARTICIPANTS
1	Training Course for Hand Pump Caretakers	Pathadumbara Yatinuwara Medadeumbara Udunuwara Pathahewaheta	05 03 04 03 04	103 66 79 77 143
2	Training of Trainers Workshop	KDWSSP & RSC Staff	01	16
3	Training of Trainers Evaluation Workshop	-do-	01	16
4	Awareness programme for land acquisition procedure	-do-	01	18
5	Training Course for Pradeshiya Sabha Technical Officers	Pathadumbara Yatinuwara Medadeumbara Udunuwara Pathahewaheta Galagedara	01	17
6	Training Course for Gravity Scheme Caretakers	Pathadumbara Yatinuwara Medadeumbara Udunuwara Pathahewaheta Galagedara	01	14
7	Training Course for Pradeshiya Sabha Pipe Fitters	Pathadumbara Yatinuwara Medadeumbara Udunuwara Pathahewaheta Galagedara	01	18
8	VLOM Training Programme	Pathadumbara Yatinuwara Medadeumbara Udunuwara Pathahewaheta Galagedara	697	3485 (Average of 5 in each programme)


PROGRESS OF HAND PUMP WELL PROGAMMME
NO.OF.WELL
30
25
20
15
10
5
0
500
450
400
350
300
250
200
150
100
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OCT'91
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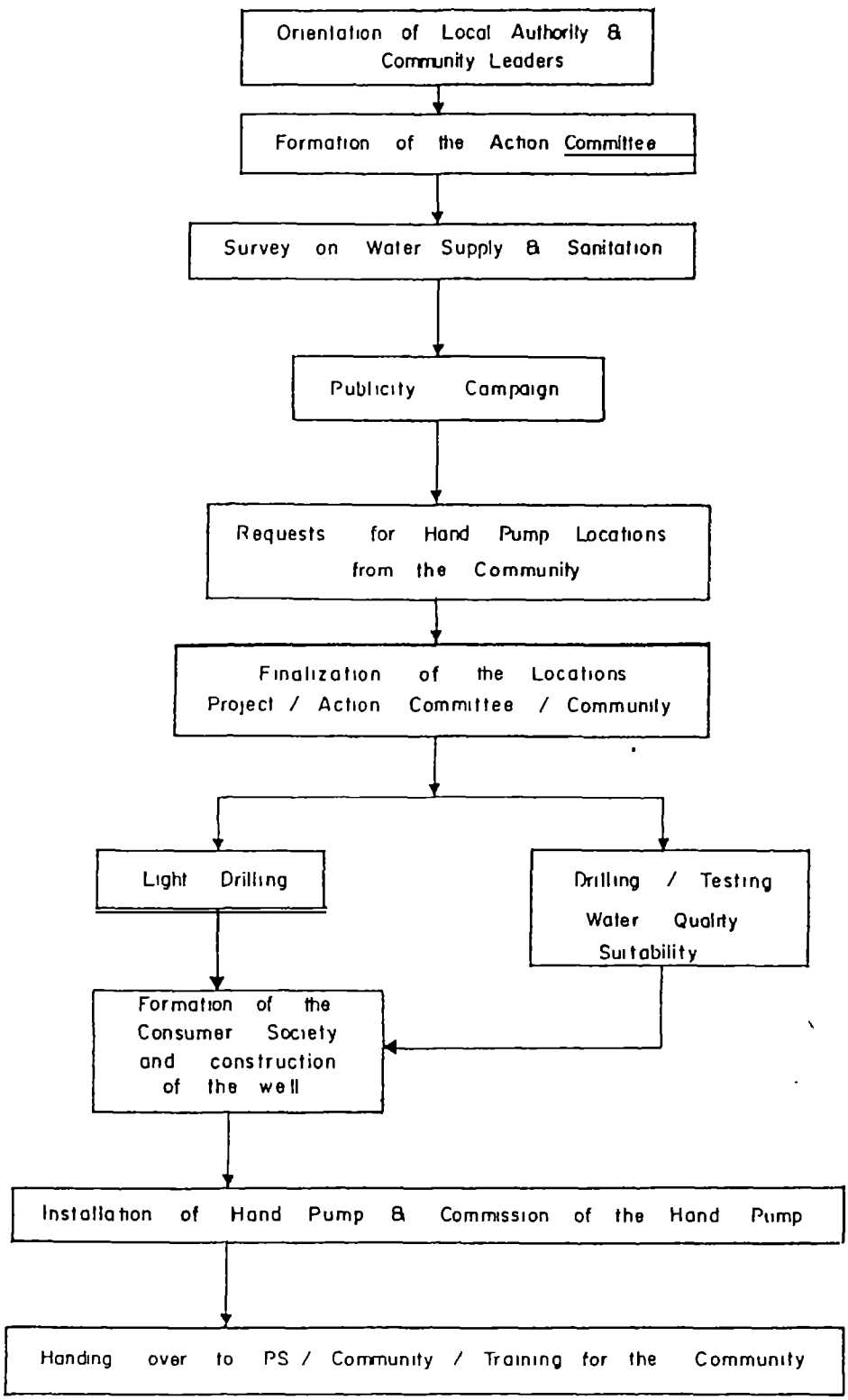
HAND PUMP PROGRAMME



HAND PUMP PROGRAMME
VOLUNTARY CONTRIBUTIONS TOWARDS MAINTENANCE FUND

S/NO	PRADESHIYA SABHA AREA					TOTAL NO OF WELLS	NO OF WELLS WHERE WCCS WERE FORMED	TOTAL COLLECTION OF FUNDS
		HWSSP	NWSDB	KDWSSP PHASE I	KDWSSP PHASE II			
1	UDUNUWARA	74	16	252	-	342	302	Rs. 138,340.00
2	GALAGEDARA	214	05	123	06	348	237	Rs. 133,387.00
3	KUNDASALE	-	28	275	26	331	308	Rs. 302,099.00
4	PATHADUMBARA	-	04	113	90	208	203	Rs. 213,613.00
5	YATINUWARA	-	12	02	82	96	79	Rs. 42,000.00
6	AMPITIYA (SENKADAGALA)	-	-	13	-	13	13	Rs. 6,100.00
7	PUJAPITIYA	381	-	01	-	382	180	Rs. 640,336.00
8	KATUGASTOTA	299	-	04	-	303	302	Rs. 55,349.50
9	AKURANA	196	-	-	-	196	52	Rs. 18,099.00
10	MEDADUMBARA	-	08	-	79	87	78	Rs. 43,800.00
11	PATHAHEWAHETA	-	16	-	159	174	142	Rs. 79,800.00
12	UDADUMBARA			-		36	21	Rs. 18,000.00
TOTAL		1164	89	783	442	2516	1917	Rs. 1,690,923.00

LOCALLY MANUFACTURED HAND PUMP SPARES
List of Rubber Components Produced Locally

Item No.	Description	Pump Model	Unit Rate (Rs.)
01	Compression Cone	INDIA MARK II STD - Model	45.00
02	Compression Cone	INDIA MARK II OTC Design	60.00
03	Cup Seal	INDIA MARK II	19.00
04	Bottom Valve "O" ring	INDIA MARK II OTC Design	6.50
05	Rubber Seal (Bottom Cap)	INDIA MARK II OTC Design	8.00
06	Rubber Seal (Bottom Cap)	INDIA MARK II STD	8.50
07	Riser Pipe Centralizer (Circular Type)	INDIA MARK II OTC Design	27.50
08	Riser Pipe Centralizer (Square Type)	INDIA MARK II OTC Design	32.00
09	Rod Centralizer	INDIA MARK II OTC Design	115.00
10	Rod Centralizer	INDIA MARK II (EDW)	8.50
11	Rubber Seating U/V	INDIA MARK II STD Model	6.00
12	Rubber Seating L/V	INDIA MARK II STD Model	7.00
13	Rubber Seating L/V	INDIA MARK II OTC	6.50
14	Rod Centralizer	AFRIDEV	25.00
15	Pipe Centralizer	AFRIDEV	90.00
16	Rubber Cone	AFRIDEV	80.00
17	Plunger Seal	AFRIDEV	15.00
18	"O" Ring	AFRIDEV	11.50
19	Valve Bobbin	AFRIDEV	26.00
20	Cup Seal	NIRA AF-76	50.00

DETAILS OF HAND PUMP SPARES PURCHASED BY PRADESHIYA SABHAS FROM BULK STORAGE OF REGIONAL OFFICE OF NWS&DB

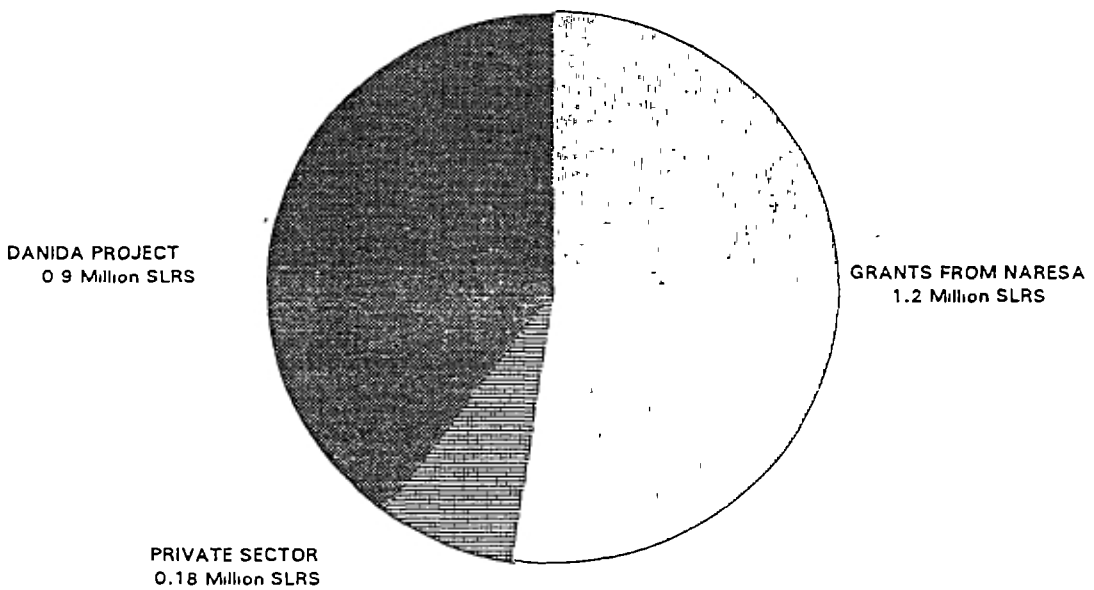
S/N	PRADESHIYA SABHA	VALUE OF SPARE PARTS PURCHASED
1	Pathadumbara P.S.	Rs. 74,829.85
2	Kundasale P.S.	Rs. 111,693.00
3	Galagedara P.S.	Rs. 32,055.00
4	Udunuwara P.S.	Rs. 27,682.00
5	Pathahewaheta P.S.	Rs. 2,400.00

TOTAL POPULATION SERVED UNDER PIPED WATER SYSTEMS

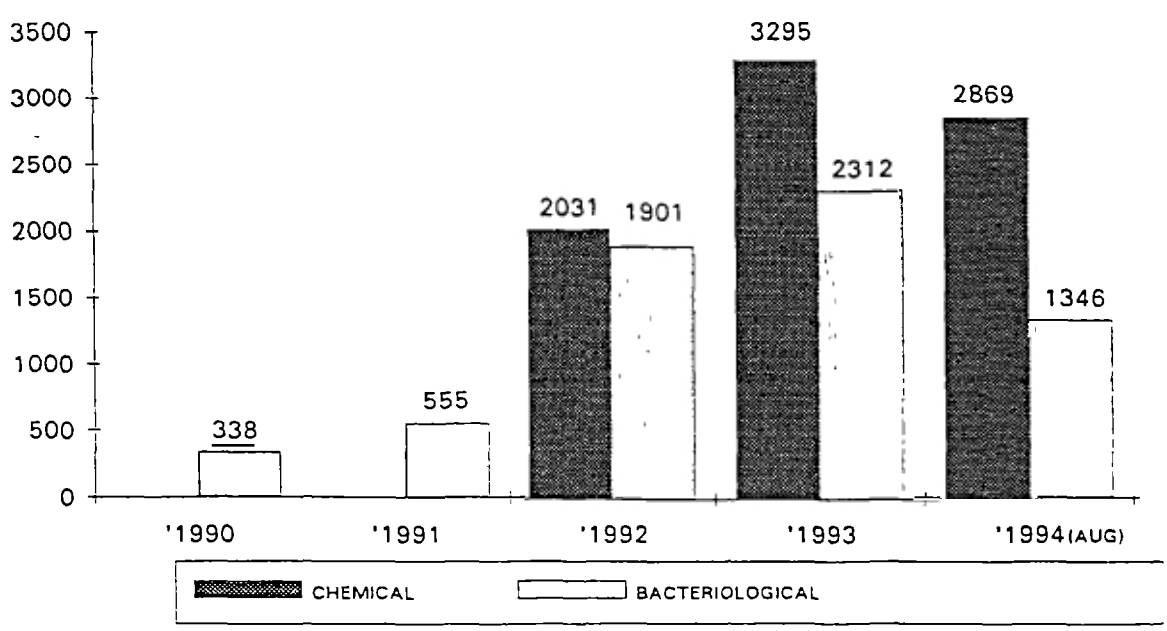
NAME OF THE SCHEME	NO OF BENEFICIARIES
1) Rehabilitation of Ampitiya WSS	10,000 Nos
SUB TOTAL	10,000 Nos
2) Rehabilitation of Tennekumbura WSS	3,600 Nos
SUB TOTAL	3,600 Nos
3) Consolidation of Harispattuwa WSS	
i. Akurana	2,200 Nos
ii. Rajapihilla	3,800 Nos
iii. Alawathugoda	2,300 Nos
iv. Kulugammana	11,600 Nos
v. Hedeniya	2,300 Nos
vi. Bokkawela	1,800 Nos
vii. Yatihalagala)	
viii. Gohagoda)	16,000 Nos
ix. Kondadeniya	5,200 Nos
x. Ankumbura	2,100 Nos
SUB TOTAL	47,300 Nos
4) Network Improvement work in Udu-Yatinuwara WSS	21,000 Nos
SUB TOTAL	21,000 Nos
5) Laying Gravity Main and construction of new intake to Wattegama Existing WSS	5,000 Nos
SUB TOTAL	5,000 Nos
6) Construction of Gravity Schemes	
i. Aswayawetunakandura	300 Nos
ii. Mudaliwatte	250 Nos
iii. Kadaturawa	100 Nos
iv. Gonambil Colony	500 Nos
v. Alagalla	600 Nos
SUB TOTAL	1,750 Nos
7) Rehabilitation of small scale water schemes though local authorities	
i. Pangirimanna	350 Nos
ii. Kadaturawa	600 Nos
iii. Pasgama	1,200 Nos
iv. Uduwela-Udugama	1,500 Nos
v. Etulgama	450 Nos
SUB TOTAL	4,100 Nos
TOTAL	92,750 Nos

PERFORMANCE OF THE LABORATORY

INCOME GENERATED IN THE LABORATORY (2.3 Million SLRS)



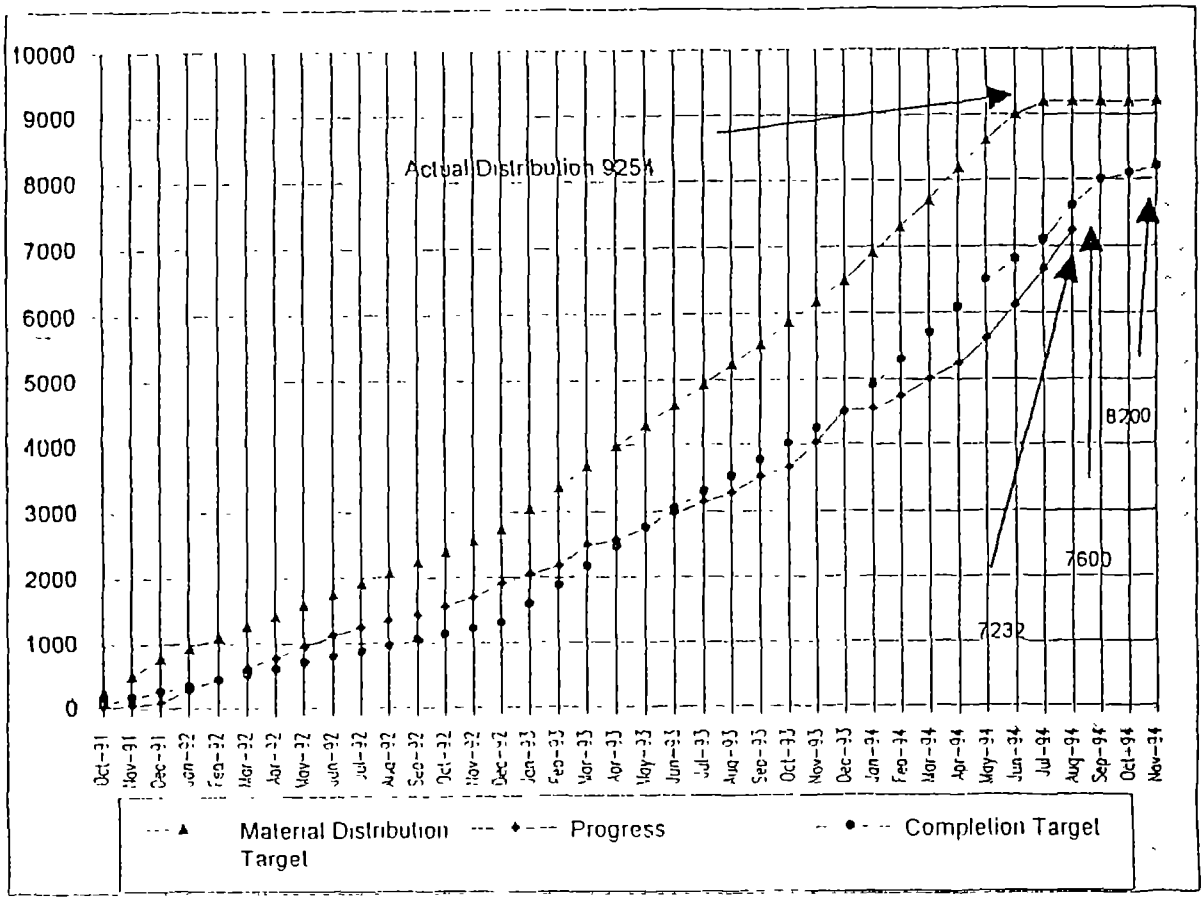
NUMBER OF ANALYSIS DONE IN THE REGIONAL LABORATORY



PROGRESS OF SANITATION PROGRAMME
KDWSSP - PHASE II

	Target by November 30, 1994	Target by December 31, 1993	Target by Aug 31, 1994	Progress 1.8 1994-30.8.1994	Cumulative Progress 30.8.1994	Progress as of 30.8.1994
Establishment of Action Committees	110	86	100	*	98	89.09%
Selection of Beneficiaries	9200	6500	9200	*	9458	102.8%
Training of Volunteers	700	582	700	*	743	106.0%
Training of Masons	196	186	196	*	223	113.7%
Material Distribution	9200	6500	9200	*	9254	100.6%
Completion of Toilets	8200	4500	7100	500	7169	87.42%
Completion of Demonstration Toilets	150	98	130	2	132	88%

No completed up to roof level - 570
No. completed up to ground level - 645
* Targets achieved



DET OF LOW COST DOUBLE PIT LATRINE

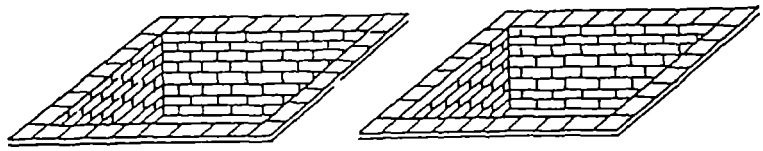
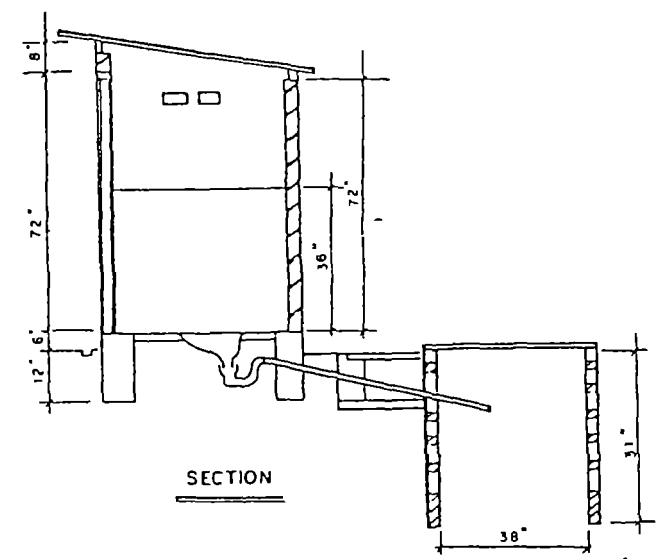
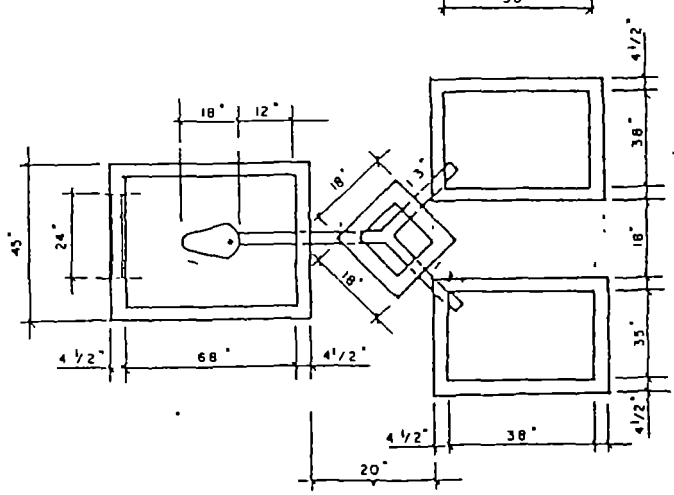


DIAGRAM OF PITS



SECTION



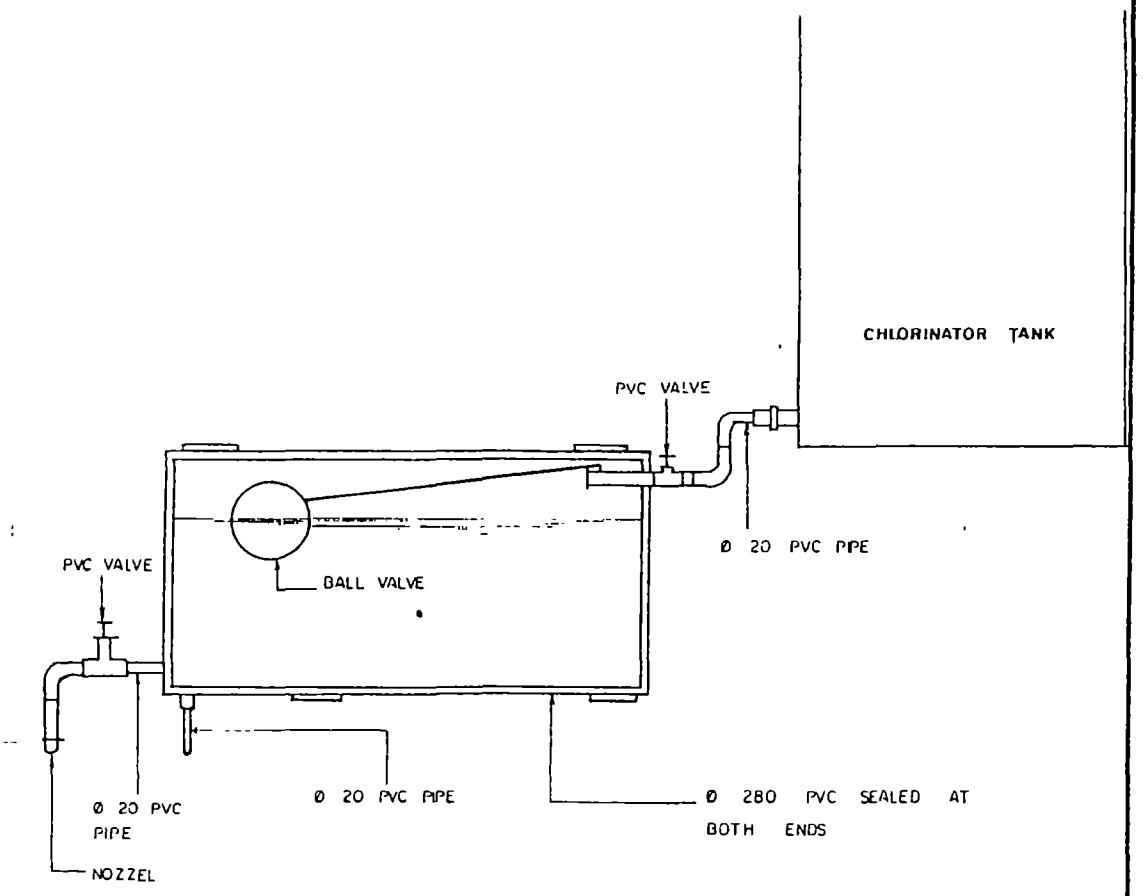
PLAN

DETAILS OF HEALTH EDUCATION PROGRAMMES CONDUCTED

Activity	No Planned	NO Achieved
1. Training of PH staff on IEC (03 day workshop)	13	14
2. Computer and other Training	09	06
3. In-service training for Hospital Staff on Health Education' (03 day workshop)	10	13
4. Studies and surveys	03	02
5. Orientation workshop on school health for teachers	29	24
6. Orientation workshop on health education for pre-school teachers	17	13
7. Follow-up seminar for pre-school teachers	10	06
8. Training of community based volunteers on "Water and Sanitation"	192	126
9. Orientation seminar for community leaders	12	12
10. Orientation seminar for food haulers	07	07
11. Radio Programme - "SUWASENDELLA" (weekly)	136	148
12. Printing of materials and distribution a) School health card (Sinhala)	20,000	20,000
b) School health card (Tamil)	10,000	10,000
c) Good health habit (Posters)	30,000	30,000
d) Good health habit (Booklet)	5,000	5,000
13. Production of AV materials for exhibition	20 display board	20

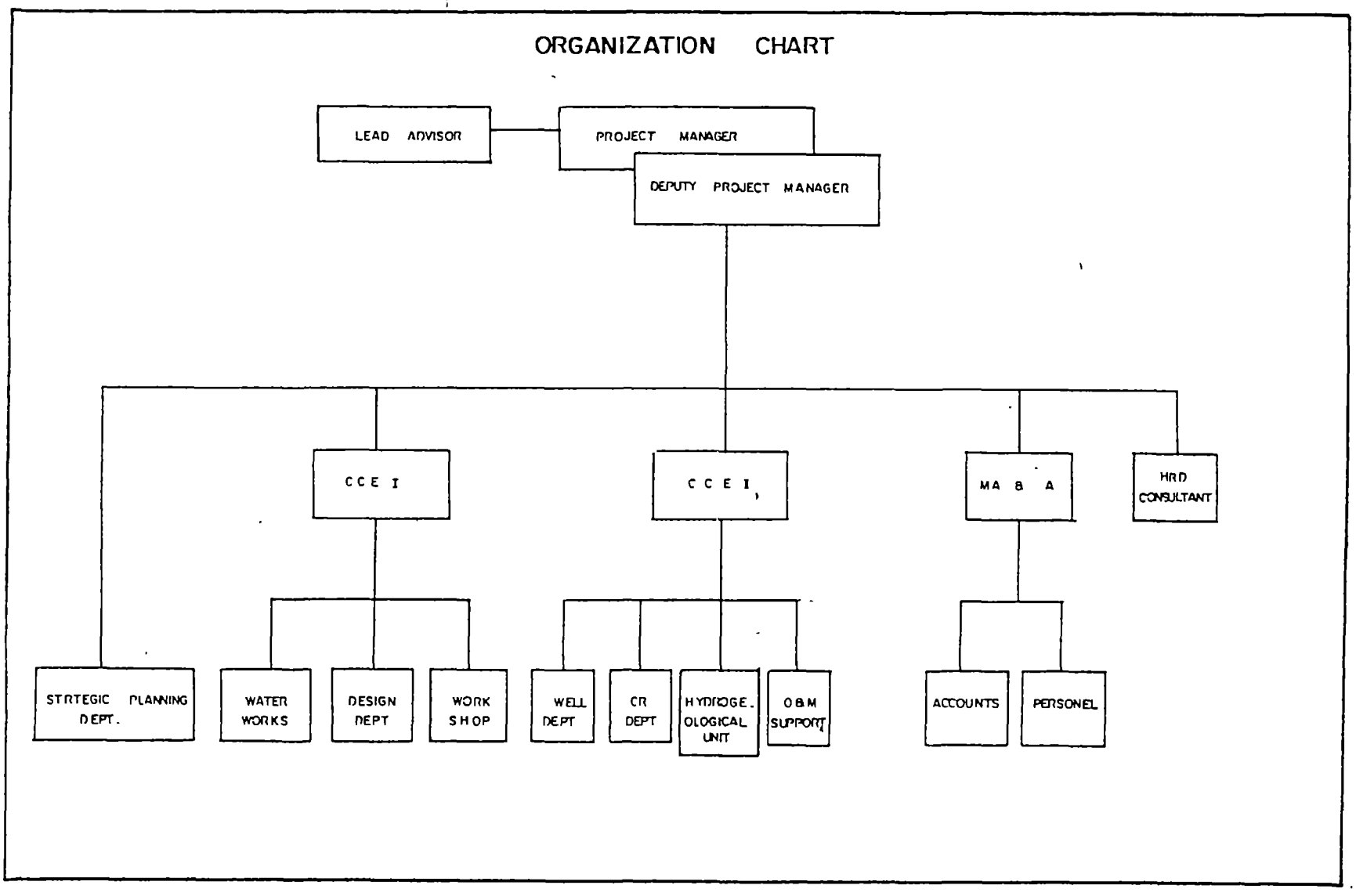
DETAILS OF MATERIAL SUPPORT FOR THE DEPARTMENT OF HEALTH SERVICES

No.	Item	Quantity	Value
01.	Overhead Project	01	Rs. 22,750.00
02.	Slide Projector	01	Rs. 34,250.00
03.	Project Screen	01	Rs. 7,500.00
04.	Olympia Type Writer - English	01	Rs. 14,500.00
05.	Olympia Type Writer - Sinhala	01	Rs. 17,150.00
06.	Microphone Stands	02	Rs. 2,500.00
07.	FM Microphone	02	Rs. 900.00
08.	Table Mike Stand	02	Rs. 1,800.00
09.	Sony Colour TV 27"	01	Rs. 69,950.00
10.	Sony Radio Cassette	01	Rs. 7,950.00
11.	Sony Micro Recorder	01	Rs. 3,295.00
12.	Microphone 03 units	03	Rs. 2,085.00
13.	Pioneer Speakers	01	Rs. 11,000.00
14.	Video Recorder- National	01	Rs. 29,000.00
15.	Olympia Type Writer - Sinhala	01	Rs. 15,125.00
16.	Project Screen - Tripod	02	Rs. 7,500.00
17.	Digital Copy Printer - Cannon	01	Rs.300,000.00
18.	Kodak Overhead Projector	01	Rs. 26,345.00
19.	Ectachrome Projector Bulb	01	Rs. 975.00
20.	Kodak Ectachrome Slide Projector	01	Rs. 25,090.00
21.	Kodak Overhead Project	01	Rs. 26,345.00



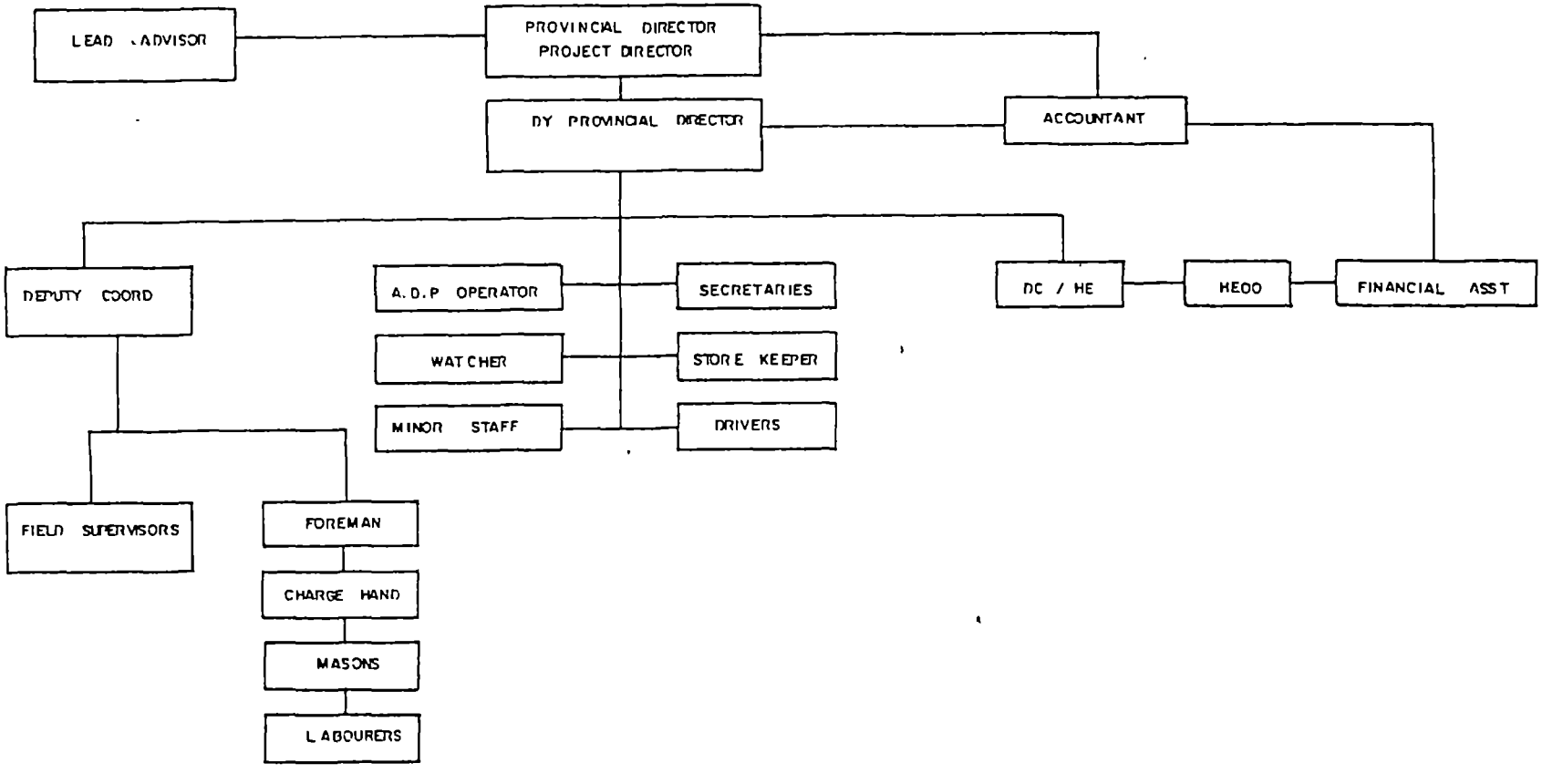
DET OF LOW COST CONSTANT HEAD CHLORINATOR

(Rs 1800)


ORGANIZATION CHART
LEAD ADVISOR
PROJECT MANAGER
DEPUTY PROJECT MANAGER
C C E I
C C E I
M A & A
HRD CONSULTANT
STRTEGIC PLANNING DEPT.
WATER WORKS
DESIGN DEPT
WORK SHOP
WELL DEPT
CR DEPT
HYDROGE. OLOGICAL UNIT
O&M SUPPORT
ACCOUNTS
PERSONEL

ORGANIZATION CHART

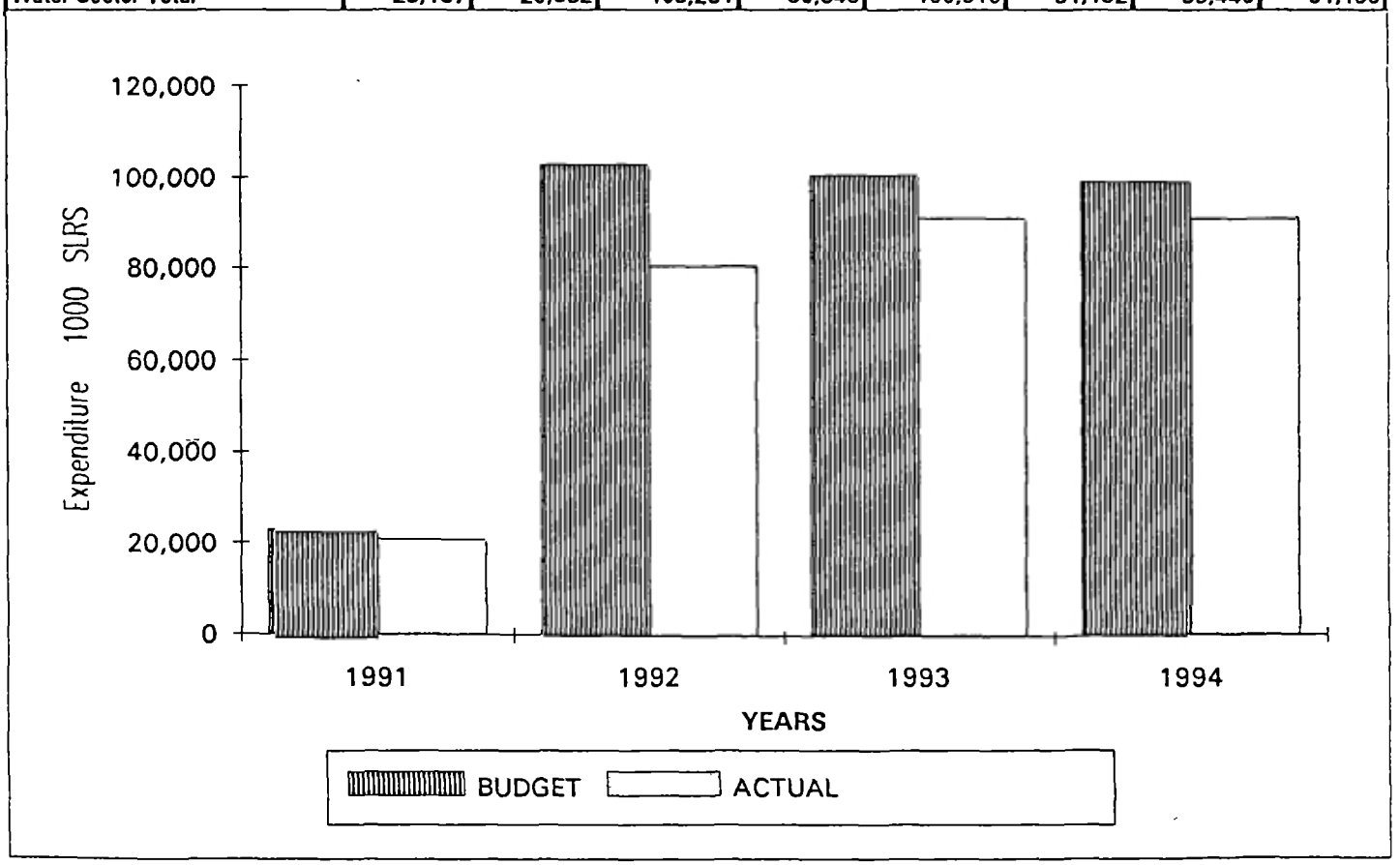
HEALTH EDUCATION & SANITATION UNIT



EXPENDITURE OF WATER SECTOR 1.10.91- 31.11.1994

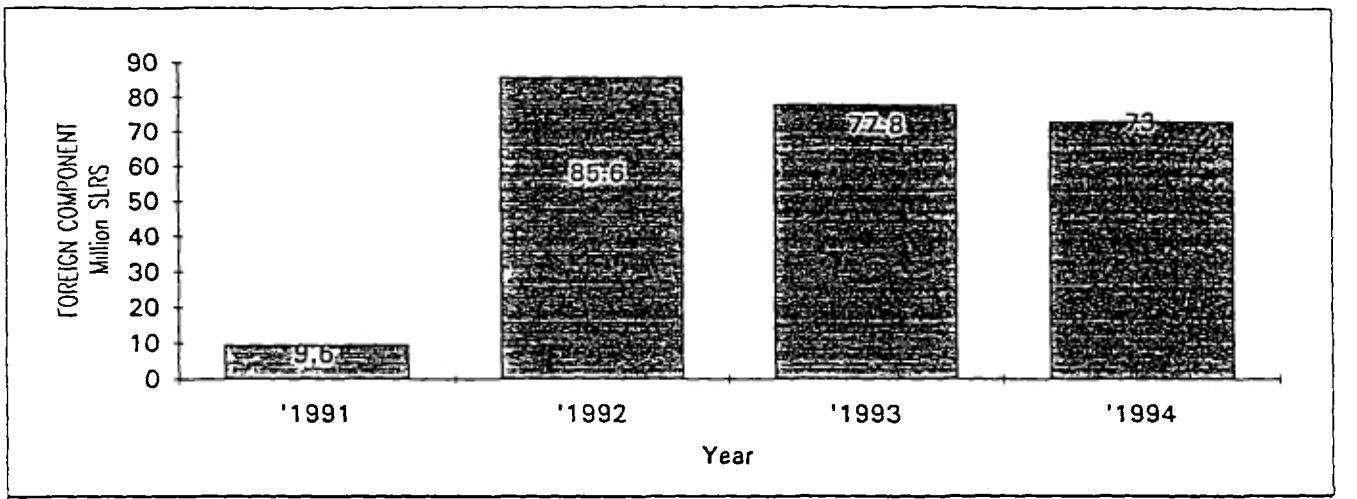
1000 SLRS

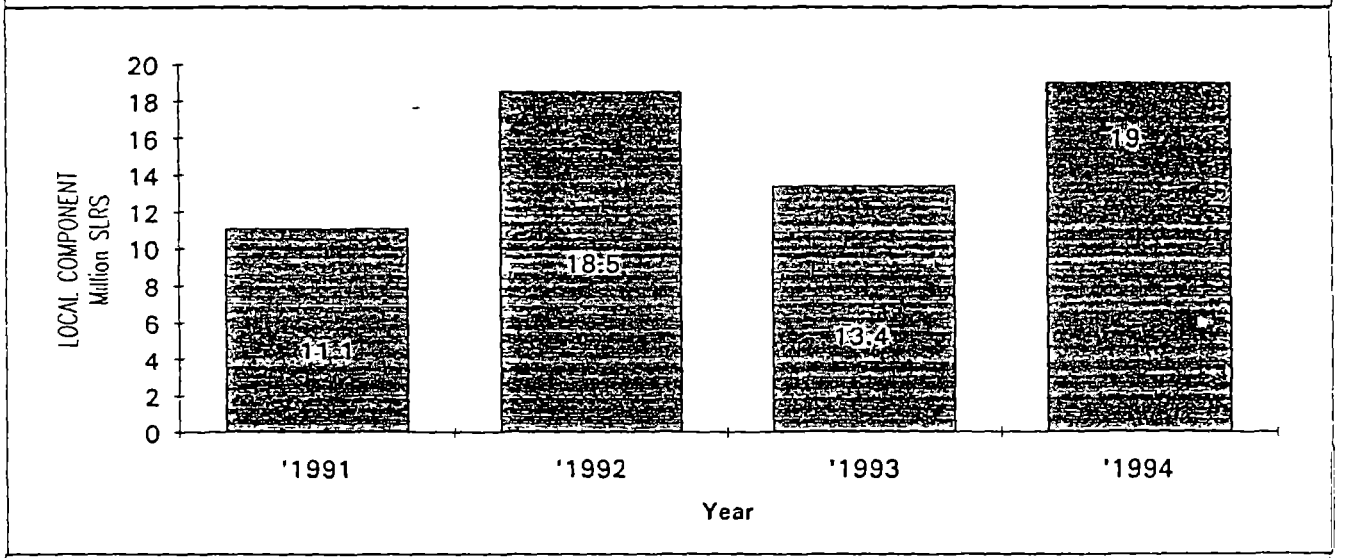
	1991		1992		1993		1994	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Administration	2,090	2,057	6,834	6,740	6,336	6,579	9,939	7,991
Planning & Desing	1,824	1,705	9,009	6,822	5,139	5,098	8,009	3,344
Water Works	11,279	7,814	71,002	27,041	46,060	39,466	52,152	56,313
Well Progeamme	2,998	4,304	10,379	12,722	18,044	18,199	18,206	14,590
Community Participation	883	665	0	1,722	1,135	1,147	1,694	1,124
Institutional Sopport	2,427	2,615	0	20,063	18,970	14,500	3,940	2,587
Transport & Stores	1,636	1,672	6,007	5,738	5,232	6,203	5,500	5,244
Water Sector Total	23,137	20,832	103,231	80,848	100,916	91,192	99,440	91,193

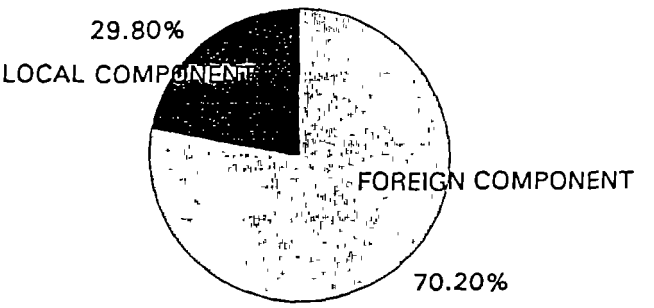


In addition to the above construction of Punchimola, Harispattuwa reinforcements and RSC Stage II has been carried out at a total cost of 28 million SLRS.

Expenditure in Water Sector (91-94)



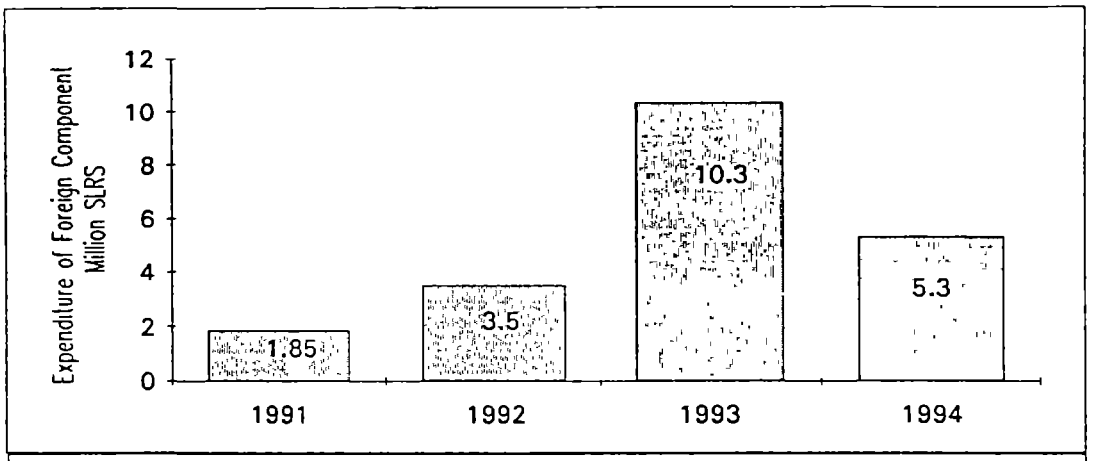


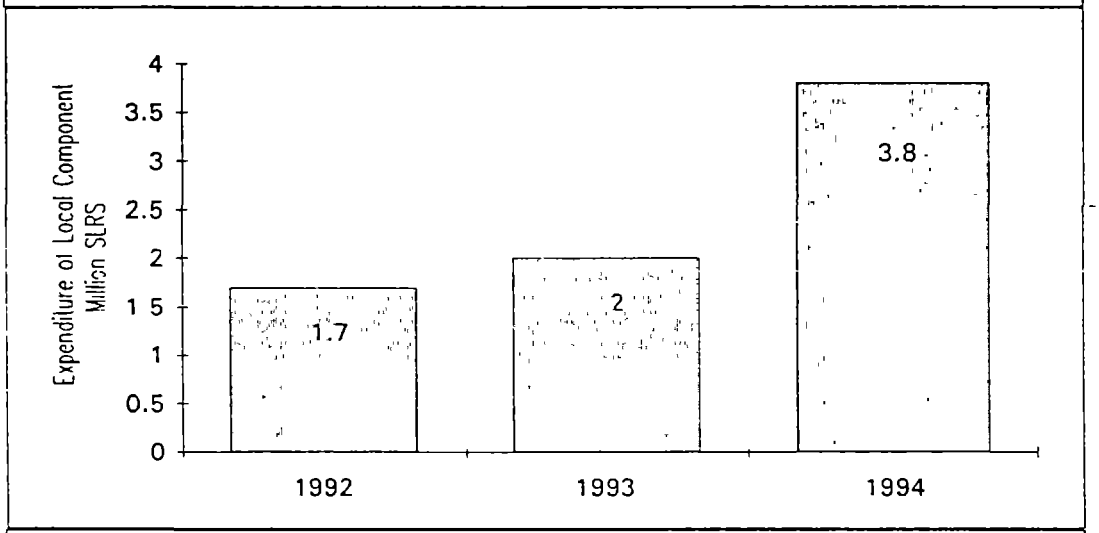


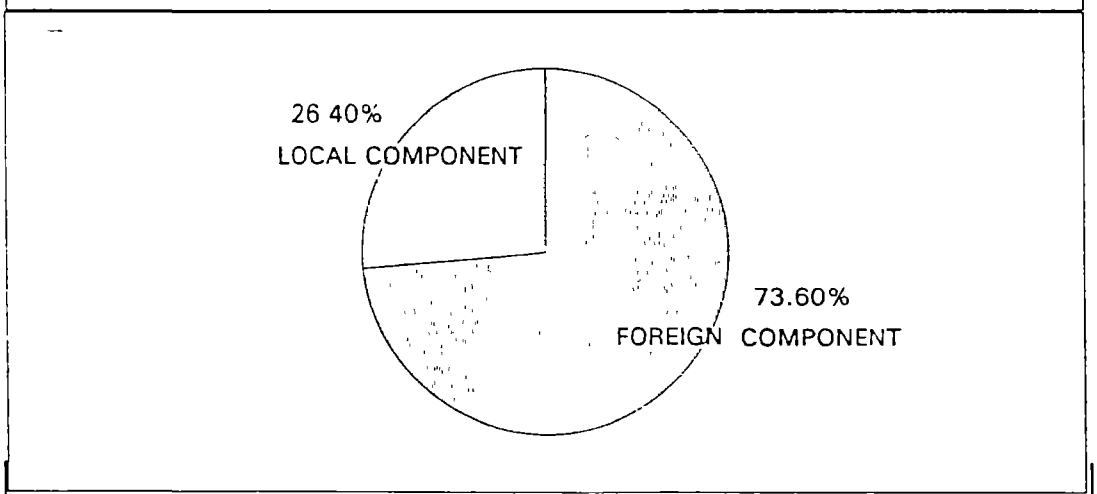
*FOREIGN COMPONENT	222	Million SLRS
LOCAL COMPONENT	62	Million SLRS
TOTAL EXPENDITURE	284	Million SLRS

*Invoices for September ,October and November have not been reimbursed by the Finnida as at today.

Expenditure in Health and Sanitation Sector (91-94)







FOREIGN COMPONENT	20.95	Million SLRS
LOCAL COMPONENT	7.50	Million SLRS
TOTAL EXPENDITURE	28.45	Million SLRS

ACHIEVEMENTS OF SUB-PROJECT ACTIVITIES

KDWSSP - PHASE II
SUB PROJECT: PLANNING, STUDIES AND DESIGN

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
1.1 Project planning & reporting	Reporting of Phase II										
	- Relevant progress report prepared as specified	10 NOS	01	04	04	01	100%	0 010	1.0		P
	- Updating work Programme of Phase II	92.02 28					100%	0.025	2.5		P
	- Evaluated and updated annually	02 times		01	01		100%	0.005	0.5		P
1.2 Investigation Technical planning & feasibility studies	Necessary and feasible planing/investigation activities continued in small scale										
	- Flow data collection from 41 important surface water sources Started during phase I will be continued by	25 sites					100%	0.001	0.1		P/LA/Beneficiaries
	- Ground water Investigation/Test pumping done in strategically important sites according to the specific need	3 sites		02	01		100%	0.001	0.1		P/NWS&DB

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
1.2 Cont .,	- Population and social economic surveys carried out for gravity schemes	9 Nos		9			100%	0.001	0.1		P/LA
	- Desk evaluation of relevant surface water sources in 3 lower priority AGA divisions	93.08.31					100%	0 001	0.1	Resource Date of ID/MD	P/
	- Important flow measurement sites selected and undertaken for reliable hydrological data collection	5 Nos		2	2	1	100%	0.001	0.1		P/RSC/LA
	- Develop flow models from rainfall data	2 Nos		1	1		50%	0.001	0 05	Resource Date of ID/MD	P/RSC/NWS&DB
	Preparation of feasibility studies										
	- A comprehensive feasibility report prepared for analysis	93.06.30		1	5		100%	0.002	0.2		P/LA
	- Cost/revenue analysis prepared and a viable tariff proposed	93.06.30		2	4		100%	0.001	0.1		P/LA
	- Approval for each feasibility report obtained from NWS&DB	93.12.31		2	4		100%	0.001	0.1		P

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
1.2 Cont. ,	- Comprehensive feasibility study prepared for a group water supply project for Kandy and suburbs and develop a suitable tariff.	93.06.30					100%	0.010	1.0		P
	A five year investment plan									Resource/NGOS/ Private Sector	NWS&DB/DHS/LA
	- Completion of an investment and financing plan for water supply and sanitation for a 5 year period in Kandy District	93 06 31					100%	0.010	1.0		
	- Monitoring of the investment plan	Contd. activity					100%	0.001	1.0	Resource P	RSC/DHS
	Appropriate design criteria										
	- Evaluation and updating of present design criteria on the basis of contemporary experience in the completed schemes										
	a) Consumption pattern	93.06.30					100%	0.001	1.0		
	b) Unaccounted water	"					100%	0.001	1.0		
	c) Average consumption	"					100%	0.001	1.0		
	d) Peak factor	"					100%	0.001	1.0		P/NWS&DB/LA
	e) Hotel consumption	"					100%	0.001	1.0		
	f) Small Boutiques	"					100%	0.001	1.0		
	g) School consumption	"					100%	0.001	1.0		

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
1.3 Design	Design of selected feasible schemes										
	- Preparation and obtaining approval of complete designs and contract documents for medium size schemes										
	a) Ampitiya Stage II	Completed Stage III					100%	0 003	0.3		P/NWSDB/LA
	Stage III	93 04.30					100%	0 001	0.1		P/NWSDB
	b) Tennekumbura	92.12.31					100%	0.002	0.2		P/NWSDB
	c) Welamboda (Sub consultancy)	93 06.30					100%	0 001	0.1		P/NWSDB
	d) Wattegama (as a optional scheme)	92.12.31					100%	0 003	0.3		NWSDB/H/O/P/NWSDB
	- Preparation and obtaining approval of complete designs and contract documents for Harispattuwa consolidation										
	a) Akurana	92 06.30					100%	0.002	0.2		P
	b) Gohagoda, Haloluwa proposal	92.06.15					100%	0.013	1.3		P
	c) Kondadeniya, Kulugammana, Gohagoda proposal	92.06.30					100%	0 011	1.1		P
	d) Bokkawela	92.12.31					100%	0.002	0.2		P
	e) Ankumbura	93.06.30					100%	0 002	0.2		P
	f) Alawathugoda	93.06.30					100%	0.001	0.1		P
	g) Hedeniya	93.03.31					100%	0 001	0.1		P
	h) Rajapihilla	Completed					100%	0.001	0.1		P
	i) Galhinna (Identification Report Only)	93.01.15					100%	0.001	0.1		P

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
1.3 Contd .,	- Preparation and obtained approval for complete designs and contract documents for Udu-Yatinuwara network rehabilitation	Completed					100%	0 013	1.3		P/NWSDB
	- 06 Small systems designed for 3000 people in Pathadumbara, Yatinuwara and Medadumbara areas	93.12.31					100%	0.006	0.6		P/LA

DETAILED ACTION PLAN

KDWSSP - PHASE II
SUB PROJECT: IMPLEMENTATION OF WATER SUPPLY SYSTEM

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
2.1 Implementation of piped systems	**Implementation of medium size schemes**										
	- *Viability of the scheme secured and beneficiary support obtained through public information and education*										
	a) Ampitiya	Completed					100%	0 02	2.0		P/LA
	b) Tennekumbura	92.05.31					100%	0.003	0.3		
	c) Wattegama	94.05 31					100%	0.003	0.3		
	- Construction/rehabilitation of medium size piped systems										
	a) Ampitiya										
	* Stage II	92.12.31					100%	0.013	1.3		P/LA/NWSDB
	* Stage III	93.12.31					100%	0.007	0.7		
	b) Tennekumbura	93.06 30					100%	0.018	1.8		
	Wattegama	94.11.30					100%	0.032	3.2		
	- Completed and fully operational schemes handed over to PS with spare parts and manuals										
	a) Ampitiya	92.01.31					100%	0.003	0.3		
	b) Tennekumbura	93.08.31					100%	0.003	0.3		P/RSC
	c) Wattegama	94.05.31					100%	0.004	0.4		

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
2 1 Cont . ,	**Implementation of Hrispattuwa consolidation** - Implementation as agreed for the improvement/consolidation works in Harispattuwa schemes										
	a) Akurana	93.05.31					100%	0.004	0.4		
	b) Gohagoda, Haloluwa	94.05 31					100%	0 027	2.7		
	c) Kondadeniya, Kulugammana, Gohagoda	94 05 31					100%	0 024	2.4		
	d) Bokkawala	94.05 31					100%	0.003	0 3		P/NWSDB
	e) Ankumbura	94.05.31					100%	0 003	0.3		
	f) Alawathugoda	94 05 31					100%	0 003	0.3		
	h) Rajapihilla	94.05 31					100%	0.003	0.3		
	- Scheme operators properly trained, O&M manuals and adequate spare parts available	94.05.31					100%	0.007	0.7	Resource O&M Advisor	
	Rehabilitation of Udunuwara-Yatinuwara system										
	- Transmission mains and distribution network systems rehabilitated to supply 35,000 people	94.06.31					100%	0.030	3.0		P/NWSDB
	- Schemes operators properly trained, O&M manuals and adequate spare parts available	93.06.31					100%	0.010	1.0	Resource O&M Advisor	P/NWSDB

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
2 1 Contd .,	**Implementation of small systems**										
	- Beneficiaries community involved in planning & design phases of the system	400 Man days					100%	0 006	0.6	Resource project	LA
	- Feasibility study for the scheme is prepared and appropriate tariff agreed with consumers and PS	10 Schemes					100%	0.004	0.4	Resource project	LA
	- Small systems constructed/ rehabilitated for 3,000 people in Patha Dumbara, Yatinuwara and Meda Dumbara (3.0 Million SLRS)	6 Schemes					100%	0.006	0.6	Resource project	LA
	- Consumer committees for each system established	6 Schemes societies					100%	0.004	0.4	Resource project	
	Institutional water supply										
	- *Identification and selection of 60* target schools, hospitals and temples together with local authorities.	93.03.31					100%	0 001	0.1		P/LA
	- Staff orientation, problem evaluation										
	a) Galagedara	Completed					100%	0.001	0.1		P/LA
	b) Kundasale	Completed					100%	0.001	0.1		P/LA
	c) Pathadumbara	93.03.31					100%	0.001	0.1		P/LA
	d) Yatinuwara	93.06.30					100%	0.001	0.1		P/LA
	e) Medadumbara	93.12.31					100%	0.001	0.1	Resource project	P/LA

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
2.1 Contd. .,	- Design and construction of water supply systems	40 Nos	3	10	27		100%	0 003	0.3	Resource project	P/LA
	- Training of operators to repair and maintain the system	8 programme		3	5		100%	0 001	0.1	Resource project	LA
2 2 Construction of hand pump wells	**370 hand pump wells constructed and completed**										
	- Hydrogeological investigation carried out,well sites selected in co-operation with beneficiaries and LA on need identification	570 sites	80	225	225	40	100%	0 010	1.0		P/LA
	- Hand Pump wells constructed, tested and taken over by consumer societies and the local authorities, for future operation & maintenance	365 nos	45 45	140 140	160 165	20	100%	0 050	5 0	Resource project	
	- Open dug wells constructed & taken over by consumers for future operation & Maintenance	50 nos					100%	0 010	1 0		

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 30.11.94	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
2 2 Contd. ,	- A functioning information transfer/technical support system established between consumers/ Pradeshiya Sabah/RSC for proper O&M of hand pump wells (3 Tier system)										
	a) Establishing Hand pump well data base	Completed					100%	0 002	0 2		P
	b) Transferring Data base to the RSC/NWS&DB	93.02 28					100%	0 001	0 1		P/RSC
	c) Purchase of spares by the local authorities from NWS&DB	3 0 Million SLRS		0 8	0 9	1.3	50%	0 003	0 15	Resource project	LA/RSC
	d) Establishment of Groundwater unit in RSC (Central)	92.12 31		0 1	0.1		100%	0 003	0 3	Resource project	NWSDB/RSC

KDWSSP -PHASE II
SUB PROJECT: SANITATION

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
3.1 Construction of Latrines	Provided for beneficiaries in activity areas										
	- Program co-ordinated with Water supply and Health Education activities	Contd activity					100%	0 003	0 3	Resource H & Sanitation Advisor	P/DHS
	- Action committees established	86 Nos	14	19	33	20	100%	0 010	0 1		MOH/DHS
	- Prioritization and selection of beneficiaries in co-operation with beneficiaries/Local Authorities carried out	Contd. activity					100%	0.002	0 2		DHS/MOH
	- Training of volunteers	638 Nos					100%	0 002	0 2	Resource project	DHS/MOH
	- Training of masons	196 Nos	30	104	52	10	100%	0 002	0 2	Technical colleges	DHS/MOH
	- Provision of material support for beneficiaries (squatting pans, EW pipes, coverdomes etc.)	8050 units	400	2193	3757	1700	100%	0.010	1 0	Resource project	DHS/MOH
	- Beneficiary contribution as labour and material	24 million SLRS	0 3	7.7	6	10	100%	0 010	1 0		DHS/MOH/Beneficiaries
	- Completion of latrines	8200 Nos	100	1810	2600	3691	100%	0 018	1 8		DHS/MOH/Beneficiaries
	- Completion of Demonstration latrines	150	5	20	85	40	100%	0 001	0 1		DHS/MOH
	- Provision of material support for commode chairs	500 Nos	-	500	-	-	100%	0.002	0.2		DHS/MOH

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
3.1 Cond.. ,	**Rehabilitation of sanitary facilities in institutions**										
	- Staff orientation, problem evaluation in DHS and Education Dept										
	a) Galagedara	Completed					100%	0 001	0.1		
	b) Kundasale	92 04 30					100%	0.001	0.1		
	c) Pathadumbara	92 04 30					100%	0 001	0.1		DHS/HESU
	d) Yatinuwara	92.12.31					100%	0 001	0.1		
	e) Medadumbara	93 04.30					100%	0 001	0.1		
	- Identification and selection of scool, medical or religious institutions	60 Nos	3	47	10		100%	0 200	2.00		
	- Orientation of recipient staff for proper health habits and efficie O&M	60 programme	-	27	18	15	100%	0.146	1.46		HESU
	- Sanitation facilities constructed/ rehabilitated in the institutions	60 Nos	2	8	30	20	100%	0 060	6.0	Resource P	DHS/DES
	- Necessary Budgetary allocations are made for proper O&M by the recipient organisation	0 5 million SLRS		0 1 Million	0.3 Million	0.2 Million	100%	0 001	0.1	Resource P	DHS/DES

KDWSSP - PHASE II
SUB PROJECT : INSTITUTIONAL SUPPORT TO HEALTH DEPARTMENT

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
4.1 Organisation support	**Strengthening of the organizational capability of Health Department**										
	- HESU Unit operative	Completed					100%	0 010	1 0		
	- Provision of technical assistance for Health Department organisational development	26 mm	3 mm	12 mm	11 mm	1 mm	100%	0 19	1.9	Resource HE & Sanitation	Lead Advisor
	Increased capability of Health Dept. to carry out health education and sanitation programs										
	- Transfer of KDWSSP trained personnel to Health Department	30 Nos	Comp leted				100%	0 005	0 5		Project/DHS
	- Recruitment of KDWSSP trained personal to Health Dept for the project implementation	25 Nos		25			100%	0.010	1 0		DHS
	- Absorption of KDWSSP trained personal to Health Dept. for future implementation of Health/Sanitation programs	5 Nos			0	05	100%	0 003	0 3		DHS
4.2 Material Support	**Provision of material support for increased activities**										
	- Identification of the material needs of HESU and MOH offices in operational areas	92.04 31					100%	0 005	0.5	Resource HE & Sanitation Advisor	DHS/MOH
	- Provision of necessary material support for health education & sanitation and training to areas	94 06.31					100%	0 008	0.8		P/DHS/MOH
	- Transfer of transport facilities to DHS	92.06.31					100%	0 002	0.2		P

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
4.3 HRD on the personnel	**HRD Training plan developed**										
	- Overall training plan for Health Dept staff prepared and approved by HESU/DHS	92 12 31					100%	0 003	0 3	Resource HE & Sanitation Advisor HRD Advisor	HESU/DHS
	- Training programs co-ordinated with the CPU/NWS&DB/project	05 Nos training Co-ordinating meeting		02 01	02	02	100%	0.002	0 2		DHS/NWSDB
	Health personnel capability increased and available resources effectively utilized										
	- Training programs implemented according to the plan	51 Nos programme	2	15	21	13	100%	0 003	0 3	Resource HE & Sanitation Advisor	DHS/HESU
	- Continued evaluation of the training implemented	Contd activity			01	01	100%	0.002	0.2		
	- Personnel policy evaluated and developed according to HRD plan	92.12 31					50%	0 003	0 15	Resource HRD Advisor	P/DHS
	- Internal and external human resources identified and flexibly used in HE and sanitation programms	Contd. activity					50%	0 002	0 10	Resource HRD Advisor	P/DHS

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAIIAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
5.1 School Health Eduatcation	**Health education activity plan for schools/pre-school implemented including developed monitoring system**										
	- *School community integrated action committees with Health Department representatives established and actively involved in project operational areas*	315 Committees		150	105	60	100%	0 005	0.5	Resource HE & Sanitation Advisor	MOH/DHS
	- Health Education programs implemented for school and pre-school staff	82 Nos of programme		32	30	20	100%	0 005	0.5	Resource HE & Sanitation Advisor	MOH/DHS
	- Health awareness campaigns through the staff to the children in schools/pre-schools implemented	1200 Nos programmes	200	400	400	200	100%	0.010	0 1	Resource MOH	School Staff/DES
5.2 Hospital Health Education	**Health education activity plan for hospitals implemented including developed monitoring system**										
	- Hospital committees with community representatives established for all Hospitals in operational areas	32 Nos	5	10	17		100%	0.006	0 6		MOH/DHS
	- Continuous Health Education programs implemented for hospital staff	80 Nos of programmes		25	25	30	100%	0 004	0.4		MOH/DHS
	- Health education programs carried out for patients	22000 Nos of programmes	500	3500	8000	1000 0	100%	0.010	1.0		MOH/DHS

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
5.3 Community Health Education	**Health education activity plan for communities implemented including developed monitoring system**										
	- Health programme planned and finalized through community leaders/WCSS										
	a) Galagedera	92 06 31					100%	0 004	0 4	Resource HE & Sanitation Advisor	MOH/DHS
	b) Kundasale	92.06 31					100%	0 004	0 4	"	"
	c) Pathadumbara	92.08.31					100%	0.004	0 4	"	"
	d) Yatinuwara	92 12 31					100%	0.004	0 4	"	"
	e) Medadumbara	93.01 31					100%	0.004	0 4	"	"
	- Health education programs implemented through the community	3200 programme	300	900	1000	1000	100%	0.016	0 16	Resource	MOH/DHS
	- Health education plan monitored and evaluated	15 Monitoring meeting	1	4	6	4	100%	0.001	0.1	Resource HE & Sanitation Advisor	MOH/DHS
	- Orientation of community leaders/ WCCS	31 Nos of programme	2	15	10	4	100%	0.001	0.1		DHS
	- Orientation of mass media personal	1 Nos of programme				1	100%	0.001	0.1		DHS
	- Conduct radio programs	125 Nos of programme	10	39	52	24	100%	0.001	0 1		DHS

KDWSSP - PHASE II
SUB PROJECT : COMMUNITY PARTICIPATION

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
6.1 Sociological follow up studies	**Socio-cultural surveys of specific scheme areas**										
	- Small scale socio cultural surveys carried out for project planing to identify the community needs and available community resources before implementation	20 Nos	2 2	10 01	8		100%	0 010	1 0		P
	Annual follow up studies										
	- Existing plans, strategies and programs revised annually based on the findings of the follow up	Contd activity		40% 40%	40% 40%	20%	100%	0.009	0 9		P
	- Data collected on use, utilization and maintenance of the completed facilities										
	a) Water supply Health and sanitation	12 Nos studies	1 1	5 4	5	1	100%	0 012	1.2		
	b) Sanitation	3 Nos studies	1 1	1 1	1		100%	0.003	0 3		
	Adaptation of community participation strategies with community resources mobilization in the programme implementation										
	- Community organisation established at village level and recognized by local authorities	400 WCSS	50 49	100 100	125 201	125	100%	0.003	0 3		LA/P
	- Women are adequately represented in community organisations	1000 office Bearers in WCSS	200 283	350 389	350 300	100	100%	0 001	0 1		LA/P

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
6.2 Contd...,	- Established community organisations involved in-siting water supply points & identifying beneficiaries	800 mandays	100 81	290 251	141 362	120	100%	0.002	0.2		LA/P
	- Voluntary participation of beneficiaries utilized in the construction process (5% of the total cost as labour and material in kind)									Resource project	WCS/LA
	a) Handpump wells (365)	2.2 million SLRS	0.2 0.2	1.0 0 6	0.038 0.95	0.3	100%	0 010	1 0		
6.3 Operation and maintenance capability	b) Minor Gravity Schemes	0.4 million		0 2	0 2 0 015		100%	0 010	1 0	Resource project	WCS/LA
	Local communities keep the facilities operational and properly maintained										
	- Care takers are trained for each supply point	1000 Nos	100 100	300 200	300 25	100	100%	0 005	0 5	Resource project	LA/RSC
	- Care takers of facilities completed are active according to the annual follow up surveys	75% active					100%	0 010	1 0		P
	- Consumer societies oriented on O&M system, village level on the job training carried out (OJT)	600 programmes	100 100	250 250	200 150	50	100%	0 003	0.3		P/LA/RSC
	- Monitoring and follow up	Contd activity									
	- WCSS contribution for sufficient funds to enable the adequate maintenance of the supply	2 million SLRS collection for O&M	0 4 0 076	0 5 0.093	0 6 0.481	0.7	100%	0 020	2.0		CS/LA
	- Spare parts purchased by WCSS from the PS	1.5 million SLRS		0 1	0 9	0 5	100%	0 002	0.2		P/LA

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KDWSSP - PHASE II
SUB-PROJECT: INSTITUTIONAL SUPPORT TO LOCAL AUTHORITIES

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
7.1 Institutional Development	**A technical/organisational support progamme prepared for local authorities**										
	- Data of the organisational capabilities of the local authorities collected and evaluated										
	a) Udunuwara	93 04.30					100%	0.001	0 1		P
	b) Galagedara	93 05 31					100%	0 001	0 1		P
	c) Kundasale	93 06.30					100%	0 001	0 1		P
	d) Pathadumbara	93 08 31					100%	0.001	0.1		P
	e) Yatinuwara	93 12.31					100%	0.001	0 1		P
	f) Medadumbara	93 10 31					100%	0 001	0 1		P
	g) Kandy Four Gravets	92 04 30					100%	0 001	0.1		P
	h) Pathahewaheta	93 12 31					100%	0.001	0 1		P
	- Technical & Organisational development identified and a general support programme prepared										
	a) Udunuwara	93.05.30					100%	0 001	0.1		P
	b) Galagedara	93.06.30					100%	0.001	0 1		P
	c) Kundasale	93 07.31					100%	0.001	0.1		P
	d) Pathadumbara	93 09.30					100%	0 001	0.1		P
	e) Yatinuwara	93.11.31					100%	0 001	0 1		P
	f) Medadumbara	93.12.31					100%	0 001	0 1		P
	g) Kandy Four Gravets	92 05 30					100%	0 002	0.2		P

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
7 1 Contd ,	**Operational capability of LAs strengthened**										
	- A functioning/co-operational link established between RSC/DHS and Local Authorities	10 Nos of water & sanitation coordinating meetings		4 4	4 3	2	75%	0.001	0 075		RSC/DHS/LA
	- Major organisational/ technical problems solved with joint resources of RSC/LA/CSS	100% problems solved					75%	0 001	0 075		
	- Monitoring system transferred from the project to RSC	93 05 31					100%	0 001	0 100		P/RSC
	- Establishment of Chief Engineer (Rehabilitation) unit in RSC in order to extend the technical services to the local authorities	92 06 31					100%	0 001	0.100	Resource project	NWSDB/RSC
7.2 Material Support	**Adequate technical material provided for successful scheme operation**										
	- Completed systems constructed with appropriate components and provided with adequate spare parts for initial operation to establish a revolving fund	2 million SLRS		2 2.9			100%	0 003	0 300		P/RSC/LA
	- Spare parts availability evaluated and secured	93.05.31					100%	0.003	0.300	Resource project	RSC
	Necessary logistical support provided										
	- The needs for successful communication, transportation and other activities evaluated and material support provided when considered necessary	3 million SLRS	1 0 60	1 0.15	1 0.5		100%	0 004	0 400		P

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
7.3 IIRD of O&M Personnel	**A general training frame and detailed training program prepared**										
	- Detailed training programs prepared for each target group in LAS with implementation schedule and cost estimates	93 06.30					100%	0 001	0.10	Resource project	LA/HRD Advisor
	- The existing programme frame evaluated and updated as necessary	Contd activity					100%	0 001	0.10		
	Local target groups trained for system construction/operation										
	- Identification/ Nomination of the target groups by the LAS.										
	a) Masons	40 Nos		20	15	5	100%	0 001	0.10	Resource project	LA/ICTAD/TC
	b) Plumbers	100 Nos		40	40	20	100%	0 001	0 10		
	c) Pump mechanics	50 Nos		20	20	10	100%	0 001	0.10	P P	" "
	- Training programs carried out as specified	10 programmes		3	4	3	100%	0 002	0.20		
	- Trained local personel located in construction and O&M										
	a) Masons	20 Nos		10	7	3	100%	0 003	0.30		LA
	b) Plumbers	50 Nos		20	20	10	100%	0.003	0 30		LA
	c) Pump mechanics	25 Nos		10	15	-	100%	0 001	0.10		LA

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
7 3 Contd ,	**Use of personnel resource evaluated and optimized**										
	- Registration for use of local beneficiary skills by the L.A S										
	a) Village level mechanics	50 Nos		20 10	20 5	10	100%	0 002	0.2		LA
	b) Village level plumbers	100 Nos		40	40	10	100%	0.002	0.2		
	- Flexible personnel policy in the O&M of local schemes										
	a) Pilot level community managed minor water schemes handed over to the community for O&M	01 Nos			01		100%	0 005	0.5		LA/P
	b) Pilot level privatized water scheme made functional	01 Nos			01		100%	0 005	0 5		LA/P
7.4 Tariff Development	**A specific tariff structure developed and agreed for each scheme**										
	- Reliable cost estimate for construction and O&M cost prepared for each scheme in feasibility study	Completed					100%	0.005	0.5		P
	- Cost revenue analysis carried out and a tariff structure resulting in a viable scheme is prepared and introduced to LAS & beneficiaries with construction of system development										
	a) Ampitiya	Completed					100%	0.001	0.1		P/LA
	b) Tennekumbura	92.06.30					100%	0.001	0.1		
	c) Welamboda	94 01.01					100%	0 001	0.1		

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGHTAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
7.4 Contd ,	d) Wattegama(Optional)	93 06.30					100%	0.001	0 1		
	e) Pathaumbara	92.12.31					100%	0 003	0 3		
	f) Pathahewaheta	92.12.31					100%	0 003	0 3		
	All completed systems are viable as per agreed criteria										
	- Proposed tariff is effectively applied into use and costs recovered										
	a) Ampitiya	Collection of 95% of the billed value for the period in operation					100%	0 004	0 4		LA
	b) Tennekumbura	"					100%	0.004	0.4		LA
	c) Wattegama	"					100%	0.005	0 5		LA
	d) Welamboda	"					-	0.004	0.4		LA
	e) Pathadumbara	"					100%	0.003	0.3		
	f) Pathahewaheta	"					100%	0 003	0.3		

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAIIAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
8.1 Organisational Support	**Strengthening of the organizational/ technical capability of NWS&DB/ RO/RSC**										
	- Identification of problem areas inside NWS&DB/RO/RSC organisation	92.06 01					100%	0 010	1.0	Resource Management Advisor	O&M Advisor
	- Provision of technical assistance for organisational development	4 mm		1	2	1	100%	0.005	0.5		Lead Advisor
	- Provision of technical assistance for O&M resource of RO/RSC	26 mm	3	11	11	1	100%	0 005	0 5		O&M Advisor
	Increased capability of NWS&DB to carry out project duties										
	- Project implementation responsibility transferred to RSC (Central)	92.06 30					100%	0 010	1.0		
	- Recruitment of KDWSSP trained technical personnel to NWS&DB	196 Nos		196			100%	0.005	0 5	Resource Lead Advisor	NWS&DB
	- Absorption KDWSSP trained personnel to RO/RSC	25 persons		4	4	17	100%	0 010	1.0	"	
	- Provision of technical assistance for NWS&DB project co-ordination resources	5 mm	2	2	1		100%	0.005	5.0	"	

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
8.2 Material Support	**Provision of material support for increased organisational competence of RO/RSC**										P
	- Provision of material & logistical support(project document Appendon 20/1)	33 million SLRS	6	12	12	3	100%	0 010	1 0		
	Provision of material support for increased Technical competence of RO/RSC										
	- Follow up and complete evaluation of technical problems in complete schemes in co-operation with RO/RSC	93.12.31		50%	25%	25%	100%	0.005	0 5		O&M Advisor
	- Provision of materials and spare parts to establish a revolving fund	2.0 million SLRS	0 3	1 0	0.7		100%	0.010	1.0		P
8.3 HRD of personnel	**Preparation of a comprehensive training plan**										
	- A detailed program describing target groups, contents of training, facilities, time schedules and costs involved	93 10.31					100%	0.012	1.2		HRD Advisor
	- Approval of the above by the competent authorities	93.10.31					100%	0 002	0 2		Finnida/NWSDB

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
8.3 Contd...,	**Personnel policy developed**										
	- Present recruitment and career procedures evaluated and improvements proposed	93 10 30					100%	0 006	0 6		HRD Advisor
	- Use of external/internal human resources studied and optimized	93 10 30					100%	0 005	0 5		HRD Advisor
	- Organizational constraints of resource utilization identified and remedy recommended	93 10 30					100%	0 005	0 5		HRD Advisor
	- Improvements in the existing procedures in the organisation proposed	93 11 31					50%	0 005	0 25		HRD Advisor
	Target groups trained as specified and capable for increased productivity										
	- Training courses carried out as specified	100 programmes	10	30	40	20	100%	0 010	1.0		P
	- Programme evaluation by scrutinizing the results	Contd. activity					100%	0 005	0 5		P
	- Provision of Technical Assistance	9 mm		3 mm	3 mm	3mm	100%	0.005	0 5	Resource HRD Advisor	Lead Advisor
	On the job training of NWS&DB personnel										
	- Working under expatriate guidance for increased technical skills and productivity, on rotation basis	Total 30 persons	23 persons	23 persons	23 persons	25 persons	100%	0 005	0.5	"	P/NWS&DB

COMPONENT	OUTPUT/OUTPUT SPECIFICATION	TARGET UNIT	TARGET SCHEDULLE				PROGRESS AS OF 31.11.93	WEIGAHAGE	OVERALL PROJECT PROGRESS	REMARKS	RESPONSIBLE
			1991	1992	1993	1994					
8.4 Tariff Development	Awareness of public and the authorities on increase of water supply & cost recovery										
	- Technical and material support for NWS&DB's policy towards viable national water tariff										
	a) Production of Teledramas on cost of water	2 Nos	01	-	01	-	50%	0.002	0 10		P
	b) Seminars/Workshop for media persons, policy makers	4 Nos	01	01	01	01	50%	0 002	0.10	Resource Lead Advisor	P/RSC
	c) Public campaigns in the schools	20 Nos		08	08	04	100%	0 001	0.10		NWS&DB/P
	- Implementation of cost recovery process in national tariff as per the co-operate plan of the NWS&DB	Recovery of O&M Dept service	30%	25%	25%	20%	100%	0.015	1.5		NWS&DB