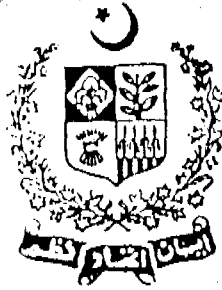


822 PK90



PC-I PROFORMA

**RURAL WATER SUPPLY, SANITATION
AND HEALTH PROJECT**

FOR

SINDH, BALOCHISTAN AND AZAD JAMMU & KASHMIR

UNDER

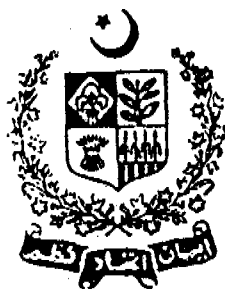
WORLD BANK ASSISTANCE

(UMBRELLA PROJECT)

**MINISTRY OF LOCAL GOVERNMENT
AND RURAL DEVELOPMENT
GOVERNMENT OF PAKISTAN
ISLAMABAD
PAKISTAN**

APRIL, 1990

822-pk90-9571



PC-I PROFORMA

**RURAL WATER SUPPLY, SANITATION
AND HEALTH PROJECT
FOR
SINDH, BALOCHISTAN AND AZAD JAMMU & KASHMIR
UNDER
WORLD BANK ASSISTANCE**

(UMBRELLA PROJECT)

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CENTRE FOR COMMUNITY WATER SUPPLY
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RN: *ISN 9571*
LO: *822 PK90*

**MINISTRY OF LOCAL GOVERNMENT
AND RURAL DEVELOPMENT
GOVERNMENT OF PAKISTAN
ISLAMABAD
PAKISTAN**

APRIL, 1990

**PART - A
PROJECT DIGEST**

1. Name of Scheme: Rural Water Supply, Sanitation and Health Project for Sindh, Balochistan, and Azad Jammu and Kashmir. (Umbrella Project)
2. Authorities responsible for:
- i) Sponsoring: Ministry of Local Government and Rural Development, Government of Pakistan.
 - ii) Funding Agency: International Development Association (World Bank)
 - iii) Execution:
 - a) Public Health Engineering Department (PHED) and Local Government and Rural Development Department (LGRDD), Government of Sindh.
 - b) PHED and LGRDD, Government of Balochistan.
 - c) LGRDD, Government of AJ&K.
 - iv) Operation and Maintenance:
 - a) Union Councils and Village Organizations in Sindh Province
 - b) Public Health Engineering Department and Beneficiaries in Balochistan
 - c) Local Government and Rural Development Department and Beneficiaries in Azad Jammu and Kashmir.
3. Time required for completion of programme: 96 months (1990-91 to 1997-98).

4. Plan Provision:

- a) i. If the programme is included in the five year plan, specify actual allocation: The project is included in the Seventh Five Year Plan priorities which indicates that in the rural areas 31.2 million people will be provided with water supply and 17 million will get sanitation facilities by 1993. Rs. 6,500 million has been allocated for Rural Water Supply and Sanitation (RWSS) as part of the Physical Planning and Housing Sector allocation of Rs. 17,311 million.

In the perspective Plan(1988-2003) the target is to provide the entire population with access to clean water and 60 percent of the rural areas with access to sewerage facilities.

- ii. If not included in the current plan, how is it now proposed to be accommodated (inter/inter sectoral): N.A

- b. If project is not in the plan what warrants its inclusion in the plan: N.A

5. Relationship of the programme with objectives of the sector:

Provision of clean drinking water and sanitation facilities in the rural areas is one of the priority sectors, as manifested in the Government efforts through various programmes. The Seventh Plan envisages the rural population coverage of water supply to be raised from 40% (1988) to 75% (1993). Similarly the sanitation facilities are to be extended from 10% in 1988 to 30% by the end of the plan period.

The criteria laid down by the Seventh Plan (Chapter-28) to

determine the provision of water Supply and sanitation facilities is given as under:

- a) Priority will be given to those areas where sweet ground water is not available at a reasonable depth and where water has to be fetched from distant sources. Similarly, special consideration will be given to areas where the rural population presently relies on surface water which is unfit for human consumption;
- b) In areas where people have installed their own hand pumps, priority will be given to sanitation and disposal schemes;
- c) Piped water supply systems will be restricted to bigger villages with a population ranging from 3,000 to 5,000 with hand pumps being provided to smaller villages; and
- d) Initial delivery systems will be based on community stand-posts storage tanks. No house connection will be provided.

To support GOP efforts in areas of Water Supply and Sanitation the "Strategic Investment Plan" (SIP) was prepared for Rural Water Supply, Sanitation and Health under the technical assistance of the World Bank with CIDA funding, for all provinces including Northern Areas (NA) and Azad Jammu and Kashmir (AJ&K). The project however cover the first phase of the programme and will be implemented in Sindh, Balochistan and AJ&K with the financial assistance of IDA. It is expected at Asian Development Bank (ADB) and Government of West Germany would provide financial assistance for the provinces of Punjab and NWFP, respectively. For Northern Areas, IDA is pursuing for possible

donor assistance with the other donor agencies.

Major areas of concentration in the Project will be on the following components:

- o Water Source Development,
- o New water Supply and Drainage Schemes;
- o Rehabilitation and Extension/ Upgrading of the existing Schemes;
- o Sanitation,
- o Institutional Strengthening and Health Education;
- o Human Resources Development.

Some area-wise important features of the Project are stated as follows:

SINDH:

For the province of Sindh, SIP envisioned the provision of safe potable water to about 1.35 million additional rural residents by the end of Seventh Plan period. This would raise coverage from the existing 35 percent to 40 percent. The planned additional coverage during Eighth Five Year Plan is for 5.79 million persons, thereby increasing coverage to about 70 percent of the rural population.

For the sanitation sector (disposal of sullage water through drains) the present coverage is estimated to be about 1.7 percent. The SIP estimates that the coverage in the form of mechanized drainage schemes could be extended to about an additional 70,000 residents in the

rural areas by the end of the Seventh Plan and another 230,000 by the end of the Eighth Plan. This would imply that coverage at the end of the Seventh and Eighth Plan would be of the order of 2.2 percent and 4 percent. However the emphasis of the SIP is on the provision of on-site disposal rather than mechanized disposal of sullage waste. This means that each proposed hand pump installation and communal tank would include a drainage component. Thus coverage of drainage would increase by 24 percent during the Seventh Five Year Plan and an additional 18 percent in the subsequent plan. Therefore, coverage at the end of the two Plans will be 26.2 percent and 46 percent respectively.

BALUCHISTAN:

The targets for water supply coverage aim at basic services levels of 45 % by 1993 (by the end of Seventh Plan) and of 70 percent by 1998 (by the end of Eighth Plan). The focus will be spread to all sizes of settlements and 100% coverage is envisaged by the year 1998.

Considerable improvements are expected in the provision of drainage/ sanitation facilities.

General target for investment focuses on the fields of Water Source Development, New Water Supply and Drainage Schemes, Rehabilitation and Extension/ Upgrading of Existing Schemes, Sanitation (Latrines), Institutional Aid and Human Resource Development (HRD).

AJ&K:

AJ&K Government and the communities are giving highest priority to the potable drinking water. This project is considered to have a direct impact in making a head

way on all the concern issues and will be a turning point in the rural development sector.

It is expected that the SIP for AJ&K will have water supply coverage of 59% and 75% by 1993 and 1998, respectively. Whereas for the sanitation 8% target will be achieved by the end of 8th five year plan.

6. Capital cost of Programme (Summary):

	Rs. in Million			
	<u>Sindh</u>	<u>Balochistan</u>	<u>AJ&K</u>	<u>Total</u>
i. Local:	1,893.296	798.996	*898.622	3,590.914
ii. Foreign Exchange Cost:	<u>257.941</u>	<u>448.492</u>	<u>232.827</u>	<u>939.260</u>
Total:-	<u>2,151.237</u>	<u>1247.488</u>	<u>1131.449</u>	<u>4,530.174</u>

For details see Annexure I and Provincial/Area projects.

* In Azad Kashmir PC-I, the community share of Rs 229.271 million has not been reflected in this column. The local and total cost of the project has been shown as Rs 669.351 million and Rs 902.178 million respectively. For clarification also see item 19.

		Rs. (million)
7. Annual recurring expenditure after completion:	Sindh	65.288
	Balochistan	220.650
	AJ&K	<u>9.905</u>
	Total	<u>295.843</u>

Details are provided at item 15.

8. Objective of the Programme preferably in quantitative terms:

Long term objectives of the programme are summarized below:

- o To assist rural people through government and the private sector efforts to achieve the basic level of water supply, sanitation and

hygiene education in a cost effective and sustainable manner.

- o To provide appropriate and affordable technologies that are acceptable to the beneficiaries, in order to enhance long term sustainability of the system.
- o To strengthen the institutions involved in the provision of Water Supply and Sanitation by increasing their staff, providing material support and strengthening the planning and implementation procedures.
- o To minimize Government liability of operations and maintenance costs over the long term by improving cost recovery through increased community participation and ownership of water supply schemes.
- o To improve the hygiene practices of the rural people through wide spread hygiene education and promotion of latrines.
- o To improve the livelihood of women and encourage a more active role for them in decision making by the community for development of the sector.
- o To support private sector through mistri/small contractor training, and technical guidance in improved hand pump and latrine component manufacture and marketing.

Province/area wise specific objectives of the programme are as follows:

SINDH

- o 300 new mechanized water supply schemes in large (over 1000 population) and medium (500-1000 population) sized village in the brackish water and arid zones;
- o 100 new collector type mechanized drainage (sullage water disposal) schemes in large villages;
- o Rehabilitation of approximately 310 existing PHED water supply and drainage schemes and extensions and upgrading of an additional 170 schemes;
- o Water supplies in 1800 small villages (75-500 population) in the brackish water zone of Sukkar and Larkana Districts.
- o Improved water supplies in 600 small and medium size villages in the arid zones.
- o Commissioning of a Finance and Management Study in the Public Health Engineering Department;
- o Improvement of institutional capability by:
 - a) Creation of a Training Coordination Unit, a Hydrogeological Unit, and a Planning, Monitoring and Evaluation Unit in the Public Health Engineering Department;
 - b) Creation of a Hand Pump Improvement and Maintenance Unit, a Sanitation Technology unit, and a Planning, Monitoring and Evaluation Unit in the Rural Development Department;
 - c) Creation of Community Development and Hygiene Education Units
 - d) Strengthening of the Rural Development Academy for HRD.

- o Construction of 6400 demonstration latrines, 4800 subsidized latrines and provision of parts and associated components for a further 28000 latrines;
- o Construction of 135 demonstration on-site sullage water disposal units;
- o Establishment of a hygiene education programme to be delivered by the Public Health Engineering and Rural Development Departments in conjunction with the implementation of water supply and drainage schemes;
- o Training programme for technical, managerial and administrative staff in the Public Health Engineering and Rural Development Departments, private Sector artisans, village hygiene workers, operators of mechanized water supply and drainage schemes, and care takers of small village water supply facilities; and
- o Construction of 13 new offices for the Rural Development Department at district and taluka level in Sukkur and Larkana districts

BALUCHISTAN

- o Establish community based systems for rural water supply and sanitation development, operations and management (O&M);
- o Evaluate and put to operation a sustainable, equitable and financially viable modality whereby the community pays for O&M costs and thereby is responsible for these services;
- o Strengthened sector institution providing cost effective managerial and technical support for improved water supply, sanitation and

drainage services to rural and semi-rural communities;

- o Implement about 6 new water supply schemes in the townships to provide improved service to about 140,000 people;
- o Construct about 7 drainage schemes in townships;
- o Rehabilitation of about 70 water supply schemes including renovations, upgrading, extensions and completions to provide improved service to about 350,000 people in rural communities;
- o Construct about 160 tubewells in rural communities in all four PHED circles;
- o Provide/strengthen institutional and financial management and training programme for the staff of the Public Health Engineering Department (PHED) and Local Government and Rural Development Department (LGRDD) and integrated programme for promotion of improved human waste disposal and health education in the small towns integrally with the provision of water supplies.
- o Construct integrally with the water supply programme, about 80 demonstration latrines and assistance by providing essential materials for about 1,200 latrines to be constructed by house holders.
- o Orientation/training of policy-makers, agency managerial and technical staff, private sector contractors, manufacturers and assistants, and the participating community.

AJ&K

- o Provide community based systems for rural water supply and sanitation development, operations and maintenance (O&M);
- o Work out and operate a sustainable, equitable and financially viable modality whereby the community can pay for O&M costs and a portion of the capital of water supply schemes, thereby becoming fully responsible for O&M Services;
- o Strengthen sector institution by providing cost effective managerial and technical support to rural communities;
- o Construct, integrally with the water supply programme, for about 3200 demonstration latrines, and assist by providing essential materials for approximately 9,700 latrines to be constructed by house holders;
- o Establish an improved water resources data base, and design methodology and criteria for community water supplies;
- o Set up an up-to-date management information (MIS) system, and a basis for improving the financing of urban water supply and sewerage systems;
- o Train approximately 1700 community health workers, 500 masons, 1600 plumbers, 60 extension workers, 5 extension officers, 30 sub engineers, 30 project managers, 5 assistant directors, 5 health educators and related senior and extension staff to support project implementation and sector development, policy-makers and community leaders will also be given programme orientation and training;

- o About 1588 water supply schemes in some 500 villages would be taken up. Of these about 350 villages would be where presently no water supply exists and 150 villages where partial water supply is available and there is need to rehabilitate/extend the supply to cover 100% population;
- o Promote improved human waste disposal and health education system intergrated with the provision of water supplies, institutional strengthening for Local Government and Rural Development Department (LGRDD), strengthening of the Health Education Unit of the Department of Health (DOH), and strengthening of financial management within LGRDD and Public Health Engineering Circle (PHEC);
- o As a result of above activities to achieve a target of 75% coverage for water supply and 8% for sanitation by the end of 8th Five Year Plan.

Prepared by:

Mr. Iqbal Ahmad, Director.
Ministry of Local Government
and Rural Development
Government of Pakistan
Islamabad

Mr. Amer Raza
Consultant

Checked by:

Mr. Iqbal Ahmad, Joint Secretary (RD)
Ministry of Local Government
and Rural Development
Government of Pakistan
Islamabad

Mr. Mohibul Haq, Director General (PC)
Ministry of Local Government
and Rural Development
Government of Pakistan
Islamabad

Project Status (Approval)

Sindh	20.2.1990
Balochistan	24.1.1990
Azad Jammu & Kashmir	08.2.1990

Concept Clearance:

01.11.1989

**Aid Negotiations/Loan
Agreement (Planned)**

30.4.1990

Approved by:

- i) Mr. Salman Farouqui, Secretary
Ministry of Local Government
and Rural Development
Government of Pakistan
Islamabad
- ii) CDWP
- iii) Anticipatory Approval
(Chairman ECNEC)
- iv) ECNEC

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PART "B"

PROJECT DESCRIPTION AND FINANCING

9. Location of Project:

Rural areas of the provinces of Sindh, Balochistan and AJ&K

10. Present facilities:

Sindh:

The rural population of Sindh was estimated to be 12.8 million in 1988 and is expected to climb 16.8 million by 1998. Almost 70 percent of the rural population lives in settlements with less than 500 people and only 14 percent live in bigger settlements.

Water Supply:

The base level for water supply coverage in rural areas is estimated to be 35% whereas 65 % are deprived of this essential need. About 3.5% of the rural population has the facility of the piped water supply, instigated mostly through private hand pumps. Most of these handpumps are contaminated and do not meet the standard for potable water. The main emphasis of the coverage of these handpumps are in Sweet Water Zone following Brackish zone areas where an estimated 4.28 million residents use contaminated canal water. In Delta Zone area acute water shortages occur for up to five months of the year. In Arid Zone areas water is not only difficult to find but the quality of water is also poor.

Briefly the main sources of Water Supply in Rural Sindh are:

- o Handpumps, estimated 38% of supplies.
- o Canals, ponds and streams - estimated 33% of supplies.
- o Dug Wells- estimated 20% of supplies and
- o Piped water - estimated 9% of supplies.

Drainage or Disposal of Sullage Water:

Presently there are about 140 villages with operating pipe borne schemes and 30 villages with operating drainage schemes. In many cases these drainage schemes have not been placed in villages which also have a pipe borne scheme. The coverage of latrines is about 4 percent according to a survey of 200 villages.

Hygiene Education:

A sample survey conducted by a team of Sociologists indicates that there is some awareness in rural population between poor water quality and poor health. However most rural residents are apathetic to the situation and are not taking any significant measures to deal with the problem.

Tariff Structure:

Present tariff structure for the Water Supply and Drainage Schemes varies according to the schemes and/or locations and on the type of connection (Household or Commercial). It ranges from Rs. 10 per month to Rs. 30 per month for the domestic house connections and Rs. 50 to Rs. 150 per month for commercial connections. For some schemes the tariff for domestic and commercial connections is kept equal. Hardly 10% of the consumers pay for water supply whereas for drainage the percentage is negligible. In most cases of the PHED schemes, no collection of user charges is yet organised. Water is thus supplied free of cost.

BALUCHISTAN

According to the Investment Plan, total population in 1988 was estimated at 4.54 million. This population is scattered in the form of small (upto 500) medium (500-2000) and large (2000-5000) settlements. Total number of the settlements is estimated to be 5882. These estimates may vary due to the uncertain growth rate and shifting population.

Water Supply:

Since independence water schemes were mostly developed for irrigation purposes. Later privately owned tubewells were also installed in areas with scarce supply of water which also became the source of drinking water.

Presently there are many areas where tubewells or water supply systems do not exist. In these areas people still rely on surface water from rivers, streams and rainwater collection ponds.

According to the July, 1989 estimates, PHED provided water to only 25 % of the rural population.

Drainage or Disposal of Sullage Water:

Throughout Baluchistan, the condition of sanitation and drainage in rural areas are extremely inadequate. The sanitary

situation is even worse because drainage systems rarely exist or are adequate for disposal of sullage only. Several types of facilities are in use depending upon social practices, household incomes and education level of the population. The main ones in use are the pour flush, VIP, Pit and Surface latrines. In the surface model, excreta has to be removed frequently. The estimate of rural coverage is barely 5 percent.

Hygiene Education:

Basic hygiene education is confined only to the religious habits and washing practice. Majority of the rural population receives little proper hygiene education and even fewer have the knowledge to understand hygiene problems and environmental pollution.

Tariff Structure:

Consumers with house connections are required to pay a fee Rs. 500 and a monthly tariff of Rs. 20 per household. PHED supplies house connections to roughly 20,000 rural customers. The present recovery rate is however, less than 10%.

AZAD JAMMU AND KASHMIR

In 1988, the rural population of AJ&K has estimated to be 2.1 million with an annual growth rate of 2.2 percent. 39% percent of the total rural population resides in approximate 5,232 villages, out of which 4,036 are small settlements (population upto 500).

Water Supply:

According to the sample survey of 75 villages, conducted by a team of consultant in five districts of AJ&K an average 42% of the rural population has access to piped drinking water, while only 1.5% has the sanitation facilities. A break-up of these statistics is as under:

District	Water Supply Coverage %	Sanitation Coverage %
Muzaffarabad	34	1.0
Bagh	28	0.5
Poonch	52	2.0
Kotli	36	1.0
Mirpur	55	2.5
Total	42	1.5

Hygiene Education:

Department of Health has created Health Education Unit which is operated by a Health Education Officer (HEO). The mandate of HEO in terms of the activities and geographical area to be covered is too broad. The unit provides basic information about hygiene education through posters, pamphlets, newspaper advertisements and radio talks. These communication channels restrict only to the literate audience and/or those who listen to the radio.

The LGRDD/UNICEF integrated project also includes a component of hygiene education. The programme provides latrine pans, as a pre-requisite for a water scheme. In other words, hygiene is taught before it can be conveniently practised. UNICEF's own assessment of the programme is that hygiene education has been the weakest area.

Tariff Structure:

Presently no users charge is levied on rural water supplies, as total O&M cost is borne by the beneficiaries. No additional charge is therefore called for.

11. DESCRIPTION OF THE PROJECT:

The Seventh Five Year Plan has set a target of increasing rural water supply coverage to 75% population, with emphasis on appropriate technologies. For drainage a target of 30% has been fixed.

The National Policy Conference on Rural Water Supply and Sanitation held in Islamabad in April, 1988, proposed a strategy for future investments in the sector which would expand the role of the beneficiaries in the development of projects, including financing of operations and maintenance costs. Hygiene education was proposed as an integral part of delivering water supply and sanitation facilities. Strengthening of sector institutions and enhancement of the role of the private sector were emphasized. It was also agreed that technologies which are appropriate, sustainable and affordable and which beneficiaries want and could afford should be adopted. Based on a sector review and recommendations of the Policy Conference the World Bank initiated a SIP planning and project preparation process to assist the Government of Pakistan in the development of an investment strategy and identification of projects for implementation from 1990 onwards.

In late 1988, the World Bank with financial support of CIDA, engaged the project team of Wardrop-Acres in association with Co-Water International and NESPAK, as consultants, for undertaking the investment planning and project preparation exercises.

The consultants team of different expertise visited Provinces/Areas and undertook different surveys from time to time between March to November 1989.

In March 1989 the consultants submitted the inception reports. Draft investment plans were submitted in July, 1989 and the Strategic Investment Plans were completed in September 1989. The World Bank expressed interest in providing IDA funding for the proposed new donor investment.

The proposed strategy of Investment Plan covers the period from 1990/91 to 1992/93 (the balance period of 3 years of the 7th Five Year Plan) and the entire 8th Five Year Plan period (1993-94 - 1997-98)

On the basis of the recommendations contained in the Final Investment Plans, the Governments of Sindh, Balochistan and AJ&K submitted their approved projects. Based on these proposals, an Umbrella Concept Clearance proposal was submitted to the P&D Division. The concept clearance committee in its meeting held on 1st November 1989 cleared the concept of the proposal.

Main features of the projects for Sindh, Balochistan and AJ&K are stated in the following paras:

SINDH:

- o 300 new mechanized water supply schemes in large (over 1000 population) and medium (500-1000 population) sized village in the brackish water and arid zones;
- o 100 new collector type mechanized drainage (sullage water disposal) schemes in large villages;
- o Rehabilitation of approximately 310 existing PHED water supply and drainage schemes and extensions and upgrading of an additional 170 schemes;
- o Water supplies in 1800 small villages (75-500 population) in the brackish water zones of Sukkar and Larkana Districts.
- o Improved water supplies in 600 small and medium size villages in the arid zones.
- o Commissioning of a Finance and Management Study in the Public Health Engineering Department;
- o Improvement of institutional capability by:
 - a) Creation of a Training Coordination Unit, a Hydrogeological

Unit, and a Planning, Monitoring and Evaluation Unit in the Public Health Engineering Department;

- b) Creation of a Hand Pump Improvement and Maintenance Unit, a Sanitation Technology unit, and a Planning, Monitoring and Evaluation Unit in the Rural Development Department;
 - c) Creation of Community Development and Hygiene Education Units
 - d) Strengthening of the Rural Development Academy for HRD.
- o Construction of 6400 demonstration latrines, 4800 subsidized latrines and provision of parts and associated components for a further 28000 latrines;
 - o Construction of 135 demonstration on-site sullage water disposal units;
 - o Establishment of a hygiene education programme to be delivered by the Public Health Engineering and Rural Development Departments in conjunction with the implementation of water supply and drainage schemes;
 - o Training programme for technical, managerial and administrative staff in the Public Health Engineering and Rural Development Departments, private Sector artisans, village hygiene workers, operators of mechanized water supply and drainage schemes, and care takers of small village water supply facilities; and
 - o Construction of 13 new offices for the Rural Development Department at district and taluka level in Sukkur and Larkana districts.

BALUCHISTAN

Public Health Engineering Department Components are:

- o Baluchistan Townships Water Supply Schemes for Kuchlak, Mastung, Hub, Ziarat, Kharan & Nok Kundi have been included in this project. There will be no new water supply schemes for rural areas in this programme. Rural schemes will be done by PHED through normal ADP allocations.
- o Rehabilitation of about 70 Water Supply Schemes including renovations, upgrading, extension & improvements to provide improved service to about 350,000 people in rural communities.
- o Provision of equipment to construct 160 new tubewells by PHED.
- o New Drainage Schemes will be constructed for the towns of

Kuchlak, Mastung, Ziarat, Kharan, Nok Kundi, Hub & Gwadur.

- o For Institutional Development the programme includes the following:
 - a. Office construction, furnishing and equipment for central and decentralized staff of PHED. The envisaged construction of Chief Engineer's Office, Public Health Engineering Laboratory and Workshops, Offices for all the Superintending Engineers, Executive Engineers, Sub-Divisional Officers etc. The central offices will have garages and warehouse facilities for operating requirements and a base for one mobile workshop.
 - b. Procurement of motor vehicles for office & field staff.
 - c. Procurement of equipment and machinery like drilling rigs & spares, mobile workshops and equipment to repair machinery and ancillary equipment.
 - d. Procurement of laboratory equipment, monitoring and evaluation equipment.
- o Professional Services envisage Technical Assistance, Planning and Management, Initial Design Services, Design and Supervision of Townships Water Supply and Drainage Schemes. Pilot studies for future planning and project preparation and District Development Plans to be carried out by the Planning and Development Department under a new cell.
- o Training facilities will be provided to staff of both PHED and LG&RDD including managerial and technical staff, village leaders, extension staff, private sector contractors, manufactures and artisans and the participating communities. Orientation of policy-makers and high level management is also envisaged.

Local Government and Rural Development Department Component include:

- o New Sanitation Schemes:

Sanitation for this programme means provision of latrines to rural communities. Integrally with the water supply programme, construction of about 80 demonstration latrines will be done and assistance will be provided for essential materials for about 11,200 latrines, to be constructed by the households on self help basis.
- o Assistance to Local Government and Rural Development Department (LGRDD) for Project management and procurement of vehicle for field and Office Staff.

AJ&K:

- o The work will be taken up in some 500 villages comprising of about 1588 water supply schemes. These schemes would benefit a population of about 0.632 million with the result to enhance the coverage from present 42% to 75% by the end of 8th Five Year Plan.
- o About 3200 low cost pour flush latrines would be constructed followed by the supply of water to the communities on 100% subsidy of cost and some 9700 latrines constructed in the communities getting water supply facility on subsidized cost by providing free pans, pipes and 'Y' junctions. This would help increase sanitation coverage from the present 1.5% to 8% by the end of 8th Five Year Plan.
- o Hygiene education being the key component of the integrated programme shall be imparted to the communities prior to taking up the sanitation activities.
- o Institutional development will be focused largely on LG&RDD, which will be the prime executing agency of the programme. The main subcomponents of the institutional development will be technical advisory unit, government staff augmentation, water resources study, training, financial reviews, monitoring & evaluation unit, and private sector development.
- o The technology to be used would be mainly gravity flow piped water schemes from spring which counts 67% Pumping would be necessary where suitable springs are not available above the settlement to be served. Pumping schemes would be from existing dug wells, bore holes and low lying springs. Pumping schemes are about 23%. In addition 3% handpump rehabilitation and 7% well rehabilitation schemes would be undertaken.

INSTITUTIONAL SUPPORT**a. Sindh**

In Sindh, the implementation of this project will be executed through the following five institutions:

- i) Public Health Engineering Department (PHED);
- ii) Rural Development Department (RDD);
- iii) Local Government Department (LGD);
- iv) Local Government and Rural Development Academy (LG&RDA);
- and v) Directorate of Health Services (DHS).

Responsibilities for above mentioned institutions as well as of other concerned departments are stated in Table 16 at page 63 of

the Sindh PC-I, whereas the detailed scope of operations alongwith organization, staffing, financial resources and human resources capacities of the two main institutions i.e. PHED and RDD, are described on page 64 to 75 of the Sindh PC-I.

In order to strengthen the capabilities of PHED, four new units are proposed to be added in the department, which are:

- i) Training Coordination Unit;
- ii) Planning, Monitoring and Evaluation Unit;
- iii) Operation and Maintenance Unit;
- and iv) Hydrogeological Unit;

The Training Coordination, the Hydrogeological and the Planning, Monitoring and Evaluation Units will be attached to the Chief Engineer's Office in the same manner as the existing Design Section. The Operation and Maintenance unit would be headed by a Superintending Engineer with an Executive Engineer in each circle and an Assistant Engineer in each Taluka. The proposed organization chart of the department is given in figure 'B' at page 68 of the Sindh PC-I

The following new Cells are also proposed to be created within the RDD:

- i) Training Coordination Cell;
- ii) Planning, Monitoring and Evaluation Cell;
- iii) Handpump Improvement and Maintenance Cell; and
- iv) Sanitation Technology (Latrine and on site Sullage Water Disposal) Cell.

The proposed organization chart for the above mentioned cells are given in Figure 'D' at page 72 of Sindh PC-I.

b. Balochistan:

Present PHED reflect the following scenario:

- o No effective institutional arrangements for collection of water charges; as a result no payment are made by the users.
- o Absence of community involvement is the main cause of failure of some schemes which requires repairs, extension and/or improvement.
- o No structured training programme exists for PHED employees.
- o PHED has not so far undertaken any project for sanitation and drainage.

In view of the above, it is strongly felt that the primary importance should be on the strengthening of the department to achieve the objectives of the project. Following steps will be taken for

strengthening the PHED and to ensure community involvement:

- i) Creation of a Planning and Community Relation Cell within PHED;
- ii) Increasing PHED staffing at key positions by:
 - o Five professionals for the Planning and Community Relations Cell, plus junior officers for field duty;
 - o Three new professionals to strengthen the Electrical and Mechanical Division, plus additional drilling crews to increase operations to two shifts;
 - o Two additional design engineers;
 - o One training co-ordinator;
 - o Adequate support staff;

The chart of proposed organization is placed after page A-6 in the Balochistan PC-I.

For effective Community involvement and proper Monitoring and Evaluation of the project following steps will be undertaken:

- o Creation of a full-time sub-committee (3 persons) which will monitor and evaluate sectoral progress, including inter-departmental co-ordination and report to the Provincial Steering Committee, under the chairmanship of the Additional Chief Secretary (Development).
- o Contractual agreements between PHED and the community (Community Water Supply Association) detailing future responsibilities. See Annexure-III of Balochistan PC-I for specimen format of agreement
- o Each District will prepare a five year plan for water supply indicating investment costs, technology options and coverage benefits.

More details about the institutional arrangement are explained at pages A-4 to A-9, B-22 and B-23 of Boluchistan PC-1.

c. Azad Jammu and Kashmir:

Project will be executed through the office of Directorate of LGRDD. The Director of LGR&DD will also be the Director of the project whereas in fields the project will be executed by existing Water and Sanitation Cell, through the field offices at markaz level. The Executive Engineer of the Water and Sanitation Cell will be responsible for planning and execution of all technical aspects of the project, including technical feasibility assessment, design,

construction supervision and assistance with technical training.

A Monitoring and Evaluation Unit will be established within LGRDD. A computerized data base will be developed and implemented within the Unit which will be responsible for the sector data base and publishing of quarterly reports on the progress of the programme.

A Technical Advisory Unit (TAU) will be formed in the Directorate of LGRDD in order to look after the technical aspect of the project. Establishment of TAU and other staff required for the implementation, is summarized at pages 16-17 of AJK PC-I. This will be in addition to the existing staff of LGRDD. The functions/working of the TAU is explained at page 8 of AJK PC-I. In order to ensure coordination following two levels of working committees, one at state-level and one at district level will be formed:

a) AJK Water Working Committee:

A Rural Water, Sanitation and Hygiene Education Working Committee under the chairmanship of Secretary, LG&RD will be established. The Committee will comprise of the Chairman, District Councils, operational heads of relevant Line Departments (DOH, DOE, AG), Chief Advisor of the project of TAU and a representative of UNICEF. This Committee will be formed as a sub-committee fo AJK Development Working Committee. The Chairman of this Committee will report progress to the Development Working Committee and solicit approval for the district plans. The Committee will approximately meet four times per year.

b) District Water Working Committees (DWWC):

For the preparation of District Water and Sanitation Plan, number of schemes and village selection criteria, District Water Working Committees (DWWC) will be established under the chairmanship of Chairman, District Council and composed of Assistant Director and Project Managers of LG&RDD, District Health Officer and District Education Officer.

More details about the administrative structure of organization responsible for implementation and maintenance for project is explained from page 7-16 of the AJK PC-I.

MLG&RD (FEDERAL LEVEL):

a) **Policy Implementation Review Committee (PIRC)**
Rural Water Supply and Sanitation Sector:

The PIRC is proposed to be established in the MLG&RD will oversee the activities in WSS sector as a whole and ensure that sector policies and strategies as described in the SIP are effectively implemented. The Board will have no regulatory or supervisory

authority over the Provincial Departments but will provide guidance to facilitate planning and decision making process. It will also advise donor agencies on investment needs in the WSS sector and review project proposals to ensure consistency with the overall sector policy.

The core membership of the PIRC is proposed as follows:

Secretary, Ministry of Local Government and Rural Development, Government of Pakistan	Chairman
Secretaries, Provincial Local Government and Rural Development and Public Health Engineering Departments of Sindh, Balochistan and AJ&K	Members
Joint Secretary, Ministry of Local Government and Rural Development, Government of Pakistan	Member
Director General (PC) Ministry of Local Government and Rural Development, Government of Pakistan	Member
Director General (People's Programme) Ministry of Local Government and Rural Development, Government of Pakistan	Member
Chief, PP&H Section, Ministry of Planning and Development, Government of Pakistan	Member
Joint Secretary (RDLP), Ministry of Planning and Development, Government of Pakistan	Member
Chiefs, PP&H Sections Planning and Development Department, Sindh, Boluchistan, and AJ&K	Member
Project Director (FRDEC), Ministry of Local Government and Rural Development, Government of Pakistan	Secretary

The Committee may invite in its meeting, representatives of other concerned local and donor agencies as and when it deems necessary.

b) Federal Rural Water Supply & Sanitation Coordination Unit

In order to have an effective supervision and efficient implementation/coordination of the project with the Provincial/ Area Governments, a Federal Rural Water Supply and Sanitation Coordination Unit (FRWSSCU) will be established in the Federal Ministry of Local Government and Rural Development. FRWSSCU will act as counterpart to donor assistance and private technical assistance to PIRC. However, FRWSSCU main functions will be to provide technical support and disseminate information to provincial programmes, maintain a sector data base for planning, monitoring and evaluation and identify and prepare sector pilot and research projects. The unit will also coordinate the activities of the Provincial/Area Governments responsible for implementation of the project. A separate proposal for the creation of the unit will be prepared and submitted for approval of the competent authority. This Unit will be significantly funded by the UNDP and UNICEF.

PROJECT JUSTIFICATION:

The project includes both quantifiable and non-quantifiable benefits. Due to the difficulty in measuring benefits various alternative techniques were used to quantify benefits. These include (i) actual payments currently made for the purchase of water in villages where there is a market for water (ii) an estimation of time saved by the installation of water supply schemes (iii) an estimation of the capital and operations and maintenance costs by the community for the schemes implemented in the past as a measure of perceived benefits and (iv) a general survey on willingness to pay.

The major non-quantifiable benefits will be the health impact from improved sanitation and drainage facilities. The sanitation and drainage component is expected to have a significant impact on the health status of women and children in the project area. Due to the difficulty in measuring the impact of the project on health these benefits have not been quantified and are not included in the economic analysis presented below separately for each Province/Area.

Sindh

The estimated economic internal rate of return (EIRR) is 14.6 %. This compares favorably not only with the general return (8 to 10%) from social sector projects but also with the opportunity cost of capital in Pakistan (about 12.5 percent). The project, therefore seems to be economically justified.

EIRR is sensitive to the estimated magnitude of benefits even with a 20 percent decline in benefits if EIRR remains within the range of acceptability (8 to 10 %). Of course, it needs to be emphasized that benefits have been valued conservatively. Benefits could be significantly higher especially if we allow for other non - quantifiable benefits that are likely to accrue from the project.

Total economic cost of the project is Rs. 571 million (see table-10 of Sindh Pc-1) in comparison to financial costs of Rs. 729 million. The extent of divergence, therefore is about 22%.

A preliminary assessment of the benefits for individual water supply schemes in Sindh give an internal economic rate of return which ranges between 10% to 32 %. The benefits were estimated as one hour of the time savings per household per day. A shadow wage rate of Rs. 1.4/hour was used to value woman's time in rural Sindh.

Balochistan:

The major thrust of the investment in Balochistan is institutional development. In estimating the benefits of the Project in Balochistan, two alternate criteria were used which include revenue generation and cost-effectiveness of the project. The revenue that can be potentially generated by implementing a new cost recovery policy is expected to be Rs. 1567 million over the next eight years and an additional Rs. 326 million each year after the investment period. The government financing needed for O&M with current procedures is expected to increase to Rs. 381 million by the year 2000, whereas with a direct recovery policy, it is expected to reduce to Rs. 80 million from the current Rs. 99 million. The project is expected to achieve cost-effectiveness by providing PHED with the capacity to improve its design of schemes and a 10% savings in fuel cost. Reducing staff levels for operations and maintenance will result in additional savings of 25% to 27% in salaries.

AJ&K:

The internal rate of return for the investment in AJ&K was calculated by quantifying the time savings which individual house holds would realize as a result of the investment in water supply schemes. However, given the valuation problems associated with the quantification of benefits, and alternative approach of determining the present value of the case (capital and maintenance) a different rate of return (6 to 10%) for an average household has been adopted. This correspond to the breakeven magnitude of benefits required to the proposed investments in water supply. The results are tabulated as below:

Rate of Return	Minimum required magnitude of benefits per house hold per month to justify investment (Rs)
6 %	37/-
8 %	44/-
10 %	50/-

The average levels of willingness to pay revealed by the surveys is Rs. 30/- per house hold. Over 7% of the house holds are willing to pay more than Rs. 20/- per month for an improved level of service. Time savings are estimated about 9.75 hours per day per house hold. Hourly value of time of women of only Rs. 0.15 yields a return of 8%. If other benefits like health improvement are taken into account the returns yields will be more than 8%.

Environmental Impact:

The environmental impact from the implementation of the programme will be extremely useful in controlling the hazards due to the poor water supply, drainage and sanitation. Impact on environment by implementing the project on various components are as follows:

Water Supply:

The water supply component of the project will have positive environmental impact with respect to ground water supplies by virtue of improved design of hand pump and tube wells. Proper well seals will reduce the amount of contamination entering the aquifer. Pumping of hand pumps and motorized tube wells in the barrage area could have detrimental effect in circumstances where the brackish water/sweet water interface is close to the well intake. Pumping could cause encroachment of brackish water into the fresh water zone and consequent deterioration in water quality. This effect would however, be sporadic and marginal.

Drainage:

The impact of providing facilities for proper disposal of sullage water will be to eliminate pools of stagnant water, thereby reducing the incidence of water borne diseases. However if appropriate designs are not applied the use of on site sullage with disposal could lead to contamination of shallow aquifers which are being exploited as water supply source.

Sanitation:

Latrines have a positive impact by reducing the health hazards and odour of defecation in fields and particularly of child defecation within the domestic compound, which are the current practices for the majority of rural population.

The concentration of excreta and its underground disposal due to latrine construction may lead to localised contamination of the ground water. Care would be taken in the siting of latrines with respect to existing water supplies and in the citing of new water supplies with respect to existing latrines to prevent such contamination.

12. Date when Capital Expenditure Estimates were prepared:

Sindh: 13th September, 1989
 Balochistan: August, 1989
 AJ&K: July, 1989

13. Give breakdown of Capital cost year wise covering whole of the investment period:

Year wise break down of *capital cost:

<u>Year</u>	<u>Sindh</u>	<u>Balochistan</u>	<u>AJ&K</u>	<u>Total</u>
1990-91	88.578	160.644	56.829	306.051
1991-92	225.006	231.367	84.107	540.480
1992-93	379.975	203.004	153.428	737.407
1993-94	389.887	163.125	141.598	694.610
1994-95	348.098	144.607	187.567	680.272
1995-96	309.136	112.199	159.471	580.806
1996-97	262.618	110.482	168.996	542.096
1997-98	147.939	88.376	179.453	415.768
1998-99 **	--	33.684	---	33.684
<u>Total:</u>	<u>2151.237</u>	<u>1247.488</u>	<u>1131.449</u>	<u>4530.174</u>

* For details of items, see Annexure I and Provincial/Area Projects.

** Extension of Yearwise Break-up to Nine Years For Balochistan
 As the start of the project is going to be Oct, 1990, (and not July 1990) as scheduled in Aide Memoire 4 of the World Bank, eight year of the project will overlap & extend to 9th financial year i.e. year 1998/99. Due to this reason the phasing has been extended to 9th year.

14. Basis of cost Estimates.

Sindh:

- i) Market, July 1989 prices
- ii) Schedule of Rates (August 1989 + 15% premium)

Balochistan:

July 1989, constant price level

Azad Kashmir:

Determination of market rates for material and labour are based on the rate analysis of Local Government and Rural Development,

PHEC, NESPAK and UNICEF current tenders as well as October, 1989 supplier quotations.

15. Estimates of Annual Maintenance after completion of Project.

Sindh:

The maintenance cost of the project builds up from Rs 5.2 million in the year 1990-91 to Rs. 65.288 million in 1997-98. Table 2 (page 9) of the Sindh PC-I contains estimates of the year-wise operational costs (at constant prices) for the sector as a whole as well as for the project.

Balochistan:

Rs. 220.65 million which is the average of sum total of yearly O&M costs (Over 12 years) as shown in Annexure-II, Sheet 1 of 5, row 15 against the title "Total (inc. rel. price)" i.e. average of 102.3 + 107.8 + 133.5 + ----- + 405.8. "Rel Price" is the abbreviation for 'Real price increase'.

Azad Kashmir:

O&M cost would be borne by the communities after completion of the programme. The institutional cost is Rs. 9.905 million.

16. Give Unit Cost for each Category of Output:

SINDH

a) i) Pipe Laying

3" dia. pipes = Rs. 36,690/1000 Rft

4" dia. pipes = Rs. 46,762/1000 Rft

6" dia. pipes = Rs. 74,640/1000 Rft

ii) Ground level storage tank (300 gallons capacity) Rs. 10 gallon.

b) Per Capita of Different Types of Schemes

Technologies	Cost Per Capita (RS)
Canal Source (Single Pumping) For 1,000 Population	1,640
Canal Source (Double Pumping) For 1,000 Population	1,470
Canal Source (Single Pumping) For 2,500 Population	952
Canal Source (Double Pumping) For 2,500 Population	920
Tube Well (Arid Zone) For 1000 population	2,580
Tube Well (Arid Zone) For 2500 population	1,652
Non-Mechanical Scheme	
Hand Pump (Beside Canal) (3 No. in each Village)	150
Hand Dug Well with Hand Pump Offset	137
Infiltration Gallery	447
Hand Dug Well (Arid Zone 150 ft. Deep)	421

For details please see Tables No. 12 and 13 at Page 77 and 78 of Sindh PC-I.

Balochistan:

Unit rates cannot be provided at this stage of the project programme. However, tentative unit costs of the two sectors are given as under:

Cost of water source development (piped scheme based on mechanical pumping/ground water)	Rs. 5.50/1000 gallons.
Cost of water source development (piped scheme based on mechanical pumping/surface water)	Rs. 6.00/1000 gallons.
Cost of sanitation/drainage facilities (including open surface drains, solid waste disposal and pour flush latrines)	Rs. 700/capita

Overview of the current (mid 1989) market rates in the metropolitan areas of Balochistan and analysis of rates done by CIDA for major cost items are as follows:

<u>S.NO</u>	<u>Items</u>	<u>Approximate Rate (Rs.)</u>
1	P.C.C 1:2:4	2334/m3
2	P.C.C 1:3:6	861/m3
3	P.C.C 1:4:8	752/m3
4	Brick Work 1:3 Cement Sand Mortar	992/m3
5	Cement Plaster 1:2	411/m2
6	Cement Plaster 1:3	375/m2
7	Excavation for Water Supply	29/m3
8	Ground Level Storage Water tanks:	
	a) 2500 Gallons	20.00/Gallon
	b) 5000 Gallons	16.00/Gallon
	c) 7500 Gallons	14.00/Gallon
	d) 10000 Gallons	13.50/Gallon
	e) 15000 Gallons	13.00/Gallon
	f) 20000 Gallons	12.00/Gallon

Azad Kashmir:

Unit cost for different components of the programme is based on only base costs of the respective component/technologies and including community contribution of land and in civil work are as follows:

<u>Component</u>	<u>Unit Cost (Rs)</u>
Gravity new Schemes	1050/- per capita
Gravity rehabilitation	800/- per capita
Pumping new schemes spring	1025/- per capita
Pumping rehabilitation	755/- per capita
Pump Bore Hole New	855/- per capita
Pump Dug Well New	1475/- per capita
Pump Dug Well Rehabilitation	1050/- per capita

Detailed Tables for unit cost showing community land, civil works, government civil works, equipment is given in Annexure E at page 82 of AJK PC-I.

17. a) Give expected income statement (profit and loss account) for ten years or until normal capacity is reached.

Sindh:

The Government of Sindh rural water supply and sanitation policy is that throughout the sector, including current as well as new schemes, the community will bear the O&M costs and any capital costs for more than a basic level of services. There will therefore be no surplus or deficit arising from the project as far as ongoing in revenues/costs are concerned. As a result no separate income statement has been given in the Sindh PC-I.

Balochistan:

The basis of the proposed tariff is the O&M costs. Profit & loss account of the project appears in Annexure-II (Sheet 1 of 5) of Balochistan PC-1. The annexure shows a summary of O&M "Expenditure" & "Income" under various heads (see row 1-19). Row 20 & 21 show the "Deficit". The last three rows give a summary of "Cost of Service" (taking into consideration the deficit mentioned above) and the Govt. financing needed" with three options.

AJK:

As the O&M cost is fully to be borne by the community, no tariff is to be levied, hence no direct income would accrue to the Government. Thus no profit and loss account is required to be prepared.

b) Revenue per unit at existing and proposed tariff:

Sindh

The cost recovery strategy is directed towards recovering O&M expenditure from the beneficiary community. A proposal outlining a suggested cost recovery mechanism has been submitted to the sub-committee set up by the Government of Sindh for the purpose. In the proposal, it was stated that it will be politically unfeasible to introduce any new tax. Alternatives were therefore limited to increasing an existing rate, tax or cess. It was recommended that the most appropriate method would be an increase in the land cess. This has a number of advantages over other options, such as:

- o it will be a broad based source covering over 60% of rural households
- o it will be progressive in character.
- o there will not be substantial extra collection costs given the existing tax machinery for the provincial Board of Revenue in the rural areas.

It was also recommended to make the enhanced rates of cess more progressive by varying it with respect to farm size and irrigation status. This way small land holdings in barani areas will have to pay the least rates per acre while the highest rate will apply to large landholdings in perennially irrigated areas.

Calculations on different bases have also been submitted to the sub-committee for their consideration. For details please see pages 79 and 80 of Sindh PC-I.

Balochistan:

Existing tariff rate is Rs 500 as connection fee and Rs 20 per month per household/connection, as water charges. The proposed tariffs for water charges in addition to connection fee are:

Domestic Rs 50/month

Commercial Rs 250/month

AJK:

As the O&M cost is fully to be borne by the community, as such no tariff is to be levied by the Government.

18 Give a statement showing phasing of repayment of loans

Sindh: Out of the total programme US\$70.855 million will be met from IDA credit and will be repaid at standard terms.

Balochistan: Repayment of a loan US\$ 40.00 million (Rs. 875 million) will be decided at a later stage at the time of negotiation with the donor agency.

AJK: Out of the total programme cost US\$ 23.836 million will be met from IDA will be repaid at standard terms.

Note: The foreign assistance funding gap for Sindh and AJ&K is US \$ 13.855 million and US \$ 8.383 million respectively. The Ministry of Local Government and Rural Development has requested the Economic Affairs Division to take up the case with the World Bank for increasing the IDA loan to cover the funding gap.

19. Annual Phasing of Physical Requirement

Sindh:

(Rs. in million)

Period	Physical (%)	Financial		
		Local	FEC	Total
1990-91	5.23%	40.015	39.090	79.105
1991-92	12.28%	121.661	63.855	185.516
1992-93	19.34%	245.591	46.646	292.237
1993-94	18.61%	264.999	16.302	281.301
1994-95	15.59%	228.680	6.87	235.550
1995-96	13.01%	1898.808	6.782	1905.590
1996-97	10.43%	137.906	19.710	157.616
1997-98	5.51%	82.609	.673	83.282
Total	100.00	1311.269	199.928	1511.197

For details see Annexure B of Sindh PC-I.

Balochistan:

(Rs Million)

Period	Physical (%)	Financial Requirements		Total
		Local Currency Component (LCC)	Foreign Currency Component (FEC)	
1990-91	12.88	044.98	115.66	160.64
1991-92	18.55	116.00	115.37	231.37
1992-93	16.27	122.16	080.84	203.00
1993-94	13.08	124.81	038.31	163.12
1994-95	11.59	112.74	031.87	144.61
1995-96	08.99	088.17	024.03	112.20
1996-97	08.86	091.46	019.02	110.48
1997-98	07.08	069.53	081.85	088.38
1998-99	02.70	029.14	004.54	033.68
Total	100.00	798.99	448.49	1247.48

For details, see Annexure VII of Balochistan PC-I

AJK:

(Rs. in million)

Period	Physical (%)	Financial in million		
		Local	F.E.C.	Total
1990-91	5.02	20.327	36.502	56.829
1991-92	7.43	40.392	43.715	84.107
1992-93	13.56	118.277	35.201	153.428
1993-94	12.51	121.675	19.923	141.598
1994-95	16.58	147.415	40.152	187.567
1995-96	14.09	140.359	19.112	159.471
1996-97	14.94	149.885	19.111	168.996
1997-98	15.87	160.342	19.111	179.453
Total	100.00	898.672	232.827	1131.449-
Less Community Share		<u>229.271</u>		<u>229.271</u>
Net Cost		<u>669.401</u>	<u>232.827</u>	<u>902.178</u>

20. Foreign Exchange Expenditure:

Sindh:

The total foreign exchange component is Rs. 257.94 million. Year wise and component wise break up is as follows:

Period	Vehicles Support	Foreign Consul-tancy	Technical Assistance & Training	Total Foreign Currency
1990-91	7.067	26.625	5.398	39.090
1991-92	2.353	60.750	.752	63.855
1992-93	1.254	45.000	.392	46.646
1993-94	.703	15.000	.599	16.302
1994-95	2.269	4.500	.101	6.870
1995-96	1.394	1.500	3.888	6.782
1996-97	.743		18.966	19.709
1997-98	.673		0	.673
Total	16.456	153.375	30.096	199.927
	Add Contingency			<u>58.013</u>
	Total:			<u>257.940</u>

Balochistan: (I)

Total Foreign Exchange component is 448.50 million. Year/component wise break up is as follows:

(Rs in million)

Period	Materials, Equipment Vehicles	Professional Services	Total
1990-91	64.537	22.728	87.265
1991-92	66.006	21.033	87.039
1992-93	42.518	18.476	60.994
1993-94	16.644	12.258	28.902
1994-95	19.302	04.736	24.038
1995-96	14.674	03.458	18.132
1996-97	10.771	03.580	14.351
1997-98	10.771	03.448	14.219
1998-99	-	03.416	03.416
Total	245.223	93.133	338.356

Total Base line costs	338.356
Physical Contingencies	016.918
Price Contingencies	093.219

Total Projects Costs	448.493

AJK:

Total Foreign Exchange component is Rs. 232.827 millin. Year-wise and component wise breakup is as follows:

Period	Consultants	Material Equipment/ Vehicles	Others	Total (Rs in million)
1990-91	23.371	41.681	0.165	65.217
1991-92	27.472	5.174	0.884	33.530
1992-93	18.575	12.911	3.182	34.668
1993-94	2.603	12.922	0.549	16.074
1994-95	1.663	16.278	19.865	37.806
1995-96	1.771	12.735	0.561	15.067
1996-97	1.851	12.735	0.583	15.169
1997-98	1.934	12.741	0.621	15.296
Total	79.240	127.177	26.410	232.827

21. Likely Source of Foreign
Exchange Cost Of Project

Sindh	Rs. 257.94	million From IDA Loan
*Balochistan	Rs. 875.00	million From IDA Loan
AJ&K	Rs. 232.827	million From IDA Loan
Total:	Rs. 1365.767	million From IDA Loan

* This is actually the foreign exchange cost of the project. The reason that it does not tally with the fig. shown in item 6 is that World Bank is also financing Institutional Development for PHED including Office Equipment, Motor Vehicles, Drilling Rigs & Spares, workshop & lab equipment, monitoring & evaluation equipment, as well as new water supply & drainage schemes, all these fall under civil works in Annex. -I with no foreign component shown.

The financing of the project is summarised as below:

Rs in Million		
World Bank	448.49 (F.E.C)	As shown in Item No.6
World Bank	426.51 (L.C.C)	For Institutional Development
Sub total	875.00	
Government of Balochistan	337.00	
Beneficiaries	035.47	
Total:	1247.47	

22. Indicate Source and Amount
of Rupees Component of
Project:

	(Rs. Million)		
	Government	Beneficia- ries	Total
Sindh	497.400	**--	497.400
Balochistan	337.000	35.47	372.470
AJK	343.000	229.271	572.271
Total	1177.400	264.741	1442.141

In Sindh recurring expenditure will be borne by the beneficiaries. In Balochistan only major repairs will be done by PHED. Whereas in AJK only the institutional cost of Rs. 9.905 million will be borne by the Government.

** See Item No 17(b) of Umbrella PC-I and of Sindh PC-I

PART C

PROJECT REQUIREMENT

23.
Sindh:

FOR EXECUTION

a)	Professional and Technical	5,250 Man-Month
b)	Administrative	2,250 Man-Month
c)	Clerical	6,000 Man-Month
d)	Skilled	18,000 Man-Month
e)	Un skilled	90,000 Man-Month

FOR OPERATION

i) Public Health Engineering Department.

a)	Grade 16 - 19	73 Nos
b)	Grade 1 - 15	60 Nos
	Total	----- 133 Nos -----

ii) Rural Development Department.

a)	Grade 16 - 19	30 Nos
b)	Grade 1 - 15	98 Nos
	Total	----- 128 Nos -----

For details, see Annexure B-33 to B-36 of Sindh PC-I.

Balochistan:

The professionals will be hired for two sectors:

- (a) For institutional Strengthening
and (b) For Direct Employment on Project

Details of these two areas are as follows:

For institutional Strengthening

i)	Professional & Technical	206
ii)	Administrative, Executive & Managerial	3
iii)	Clerical	91
iv)	Sales	Nil
v)	Service	Nil
vi)	Skilled	Nil
vii)	Unskilled	Nil
viii)	Others	81
	Total	381

For details of PHED Staffing requirements See Annexure-VI. of Balochistan PC-I.

For Direct Employment on Project

i)	Professional & Technical	48
ii)	Administrative, Executive & Managerial	15
iii)	Clerical	20
iv)	Sales	Nil
v)	Service	Nil
vi)	Skilled	124
vii)	Unskilled	404
viii)	Others	38
	Total	649

AJ&K:

Professional Technical	17
Administrative, Executive and Managerial	66
Clerical	-
Sales	-
Services	12
Skilled	-
Unskilled	-
Others	-
Total	<u>95</u>

Federal Level:

Professional/technical	(B-16 to B-19)	4
Supporting Staff	(B-1 to B-15)	21
Total		25

The cell is to be provided further support through UNDP and UNICEF assistance through a separate T.A. proposal.

23 b. Likely Shortage Of Manpower

No Shortage of manpower is anticipated

c) Steps to be taken to assure availability of Manpower **N.A**

d) Approximate number of persons required per year

Sindh: About 500 persons from PHED and RDD would be trained in addition to this about 1200 Union Council members and Chairmen, over 30,000 village based organizations members, PHED operators and RDD handpump caretakers will get training. The training will be in the field of Planning, design,

Supervision, execution, operation and maintenance, community development, monitoring and evaluation and hygiene education.

Balochisatan: Approximately five hundred persons including electrical and mechanical professionals, drilling crew & operators, technical design staff, planning and community relations staff and laboratory staff will be trained locally. Contractors staff will also be trained by various experts employing on-the-job and other methods.

AJ&K: Approximately ninety five professionals including electrical and mechanical professionals, drilling crew & operators, technical design staff, planning and community relations staff and laboratory staff will be trained locally. Contractors staff will also be trained.

24. Physical and other facilities required for the project.

Sindh:

Various utilities and services necessary for successful execution and operation of the project are already available. The road construction programme under various projects, particularly the USAID and ADB assisted, need to be completed in time. This will facilitate access to villages and settlements in rural areas.

Balochistan and AJ&K:

Item	Total	To be Provided from the Project Itself	To be Provided from the Public utility.
a) Access road.	Metalled & Unmetalled Roads Available		
b) Fuel and Power		Available	
c) Public Health requirements.		Available	
d) Housing by type		Not required	
e) Others.		Nil	

25. Material, Supplies & equipment required.

Sindh:

i) Material

Major Material (minimum total requirement for execution)

a) Cement	70,000 Tons
b) Steel	3,000 Tons
c) Pipes of different sizes	350 Millions RFT
d) Hand Pumps	4,500 Nos

ii) Supplies & Spares

Spares will be needed for equipment, machinery and vehicles and would be arranged through local

manufacturers and suppliers.

iii) Equipment & Machinery

Major equipment for execution:

- | | |
|---------------------------------------|---------|
| a) Test boring machine | 2 Sets |
| b) Hand Augurs | 14 Sets |
| c) Portable Chemical
Analysis Kits | 3 Nos |
| d) Bacteriological Test
Kits | 2 Nos |
| e) Topography Survey Sets | 2 Nos |
| f) Resistivity Meters | 20 Nos |

iv) Material Spares Supplies & equipment for operation of the Project.

To be arranged by the concerned agencies and the beneficiaries reasonable for O&M.

Balochistan:

i) Materials (for execution)

Cement, steel, pipes etc. are locally available and will be arranged by the contractor/implementing agency.

ii) Supply & Spare

Spares will be needed for the equipment & machinery like drilling rigs, lab., mobile workshops, computer systems & Vehicles etc. and will be arranged through local suppliers.

iii) Equipment & Machinery

Drilling Rigs, Mobile Workshops, Computer Systems, Vehicles and Equipment for training and reproduction needs will be required. Equipment and Machinery for Rehabilitation of Water Supply Schemes will also be required.

iv) Material Spares, Supplies & Equipment for operation of project

To be arranged by the concerned agencies and the beneficiaries responsible for O&M.

AJ&K:

- I) Minimum total requirements for Execution:
- i) 16.5 Million Rft of GI pipes of different sizes from 1/2 to 4 inch dia.
 - ii) 14000 MT Cement
 - iii) 2000 MT of MS Bars.
 - iv) 170 MT of MS Channels.
 - v) Vehicles:
 - Jeeps 15
 - Motor Cycles 5
- II) Materials, Spares & Supplies and Equipment for Operation of Project
- This requirement will be made by the implementing agency and the beneficiaries responsible for O&M.
- 26) In the case of imported materials and equipment for execution, indicate:
- a) Justification for Imports. Only those equipment to be imported which are not manufactured locally
 - b) Proposed Source/Sources of Supply. Based on International Bidding from any of the World Bank member country.

FINANCIAL PLAN (TOTAL)

RURAL WATER SUPPLY, SANITATION
AND HEALTH PROJECT FOR SINDH,
BALOCHISTAN AND AZAD JAMMU & KASHMIR
(UMBRELLA PROJECT)

	PR '000			US\$ '000			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
I. Investment Costs								
A. Land								
1. Water Supply	45,127.0	0.0	45,127.0	2,148.9	0.0	2,148.9	0.00%	1.40%
2. Sanitation & Drainage	11,700.0	0.0	11,700.0	557.1	0.0	557.1	0.00%	0.36%
3. Institutional Development	16,980.0	0.0	16,980.0	808.6	0.0	808.6	0.00%	0.53%
Sub-Total	73,807.0	0.0	73,807.0	3,514.6	0.0	3,514.6	0.00%	2.29%
B. Civil Works								
1. Piped Schemes - New	874,773.0	0.0	874,773.0	41,655.9	0.0	41,655.9	0.00%	27.17%
2. Non-Piped Schemes - New	102,447.0	0.0	102,447.0	4,878.4	0.0	4,878.4	0.00%	3.18%
3. Water Schemes Rehab.	205,816.0	0.0	205,816.0	9,800.8	0.0	9,800.8	0.00%	6.39%
4. Sanitation & Drainage	260,018.2	0.0	260,018.2	12,381.8	0.0	12,381.8	0.00%	8.08%
5. Drainage & Sanit. Rehab.	22,907.0	0.0	22,907.0	1,090.8	0.0	1,090.8	0.00%	0.71%
6. Institutional Development	58,703.4	0.0	58,703.4	2,795.4	0.0	2,795.4	0.00%	1.82%
Sub-Total	1,524,664.6	0.0	1,524,664.6	72,603.1	0.0	72,603.1	0.00%	47.35%
C. Materials, Equip., Vehics.								
1. Program Support	154,901.8	118,624.7	273,526.5	7,376.3	5,648.8	13,025.1	43.37%	8.50%
2. Tech. Assist & Training	193.0	122.9	315.9	9.2	5.9	15.0	38.90%	0.01%
3. Water Scheme Equipment	419,591.9	175,884.1	595,476.0	19,980.6	8,375.4	28,356.0	29.54%	18.49%
4. Sanitation Equipment	16,036.6	3,695.1	19,731.7	763.6	176.0	939.6	18.73%	0.61%
Sub-Total	590,723.3	298,326.8	889,050.1	28,129.7	14,206.0	42,335.7	33.56%	27.61%
D. Professional Services								
1. Design & Supervision	20,932.1	6,475.9	27,408.0	996.8	308.4	1,305.1	23.63%	0.85%
2. Program Support	62,228.6	228,409.4	290,638.0	2,963.3	10,876.6	13,839.9	78.59%	9.03%
3. Tech. Assist. & Training	140,484.6	173,271.3	313,755.9	6,689.7	8,251.0	14,940.8	55.22%	9.74%
Sub-Total	223,645.3	408,156.6	631,801.9	10,649.8	19,436.0	30,085.8	64.60%	19.62%
E. Staff								
1. Program Support	100,416.6	0.0	100,416.6	4,781.7	0.0	4,781.7	0.00%	3.12%
Sub-Total	100,416.6	0.0	100,416.6	4,781.7	0.0	4,781.7	0.00%	3.12%
TOTAL BASELINE COSTS								
Physical Contingencies	2,513,256.8	706,483.4	3,219,740.2	119,678.9	33,642.1	153,321.0	21.94%	100.00%
Price Contingencies	198,205.7	35,324.2	233,529.9	9,438.4	1,682.1	11,120.5	15.13%	7.25%
TOTAL PROJECT COSTS	3,590,913.5	939,260.5	4,530,174.0	153,231.3	40,949.4	194,180.6	21.09%	126.65%

FINANCIAL PLAN (SIND)

RURAL WATER SUPPLY, SANITATION
AND HEALTH PROJECT FOR SINDH,
BALOCHISTAN AND AZAD JAMMU & KASHMIR
(UMBRELLA PROJECT)

	PR '000			US\$ '000			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
I. Investment Costs								
A. Land								
1. Water Supply	29,800.0	0.0	29,800.0	1,419.0	0.0	1,419.0	0.00%	1.97%
2. Sanitation & Drainage	10,000.0	0.0	10,000.0	476.2	0.0	476.2	0.00%	0.66%
3. Institutional Development	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
Sub-Total	39,800.0	0.0	39,800.0	1,895.2	0.0	1,895.2	0.00%	2.63%
B. Civil Works								
1. Piped Schemes - New	631,810.0	0.0	631,810.0	30,086.2	0.0	30,086.2	0.00%	41.81%
2. Non-Piped Schemes - New	102,447.0	0.0	102,447.0	4,878.4	0.0	4,878.4	0.00%	6.78%
3. Water Schemes Rehab.	96,068.0	0.0	96,068.0	4,574.7	0.0	4,574.7	0.00%	6.36%
4. Sanitation & Drainage	164,773.0	0.0	164,773.0	7,846.3	0.0	7,846.3	0.00%	10.90%
5. Drainage & Sanit. Rehab.	22,907.0	0.0	22,907.0	1,090.8	0.0	1,090.8	0.00%	1.52%
6. Institutional Development	15,940.0	0.0	15,940.0	759.0	0.0	759.0	0.00%	1.05%
Sub-Total	1,033,945.0	0.0	1,033,945.0	49,235.5	0.0	49,235.5	0.00%	68.42%
C. Materials, Equip., Vehics.								
1. Program Support	63,491.3	16,455.2	79,946.5	3,023.4	783.6	3,807.0	20.58%	5.29%
2. Tech. Assist & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
3. Water Scheme Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
4. Sanitation Equipment	8,304.7	0.0	8,304.7	395.5	0.0	395.5	0.00%	0.55%
Sub-Total	71,796.0	16,455.2	88,251.2	3,418.9	783.6	4,202.4	18.65%	5.84%
D. Professional Services								
1. Design & Supervision	2,500.0	0.0	2,500.0	119.0	0.0	119.0	0.00%	0.17%
2. Program Support	36,570.0	153,375.0	189,945.0	1,741.4	7,303.6	9,045.0	80.75%	12.57%
3. Tech. Assist. & Training	66,300.0	30,097.3	96,397.3	3,157.1	1,433.2	4,590.3	31.22%	6.38%
Sub-Total	105,370.0	183,472.3	288,842.3	5,017.6	8,736.8	13,754.4	63.52%	19.11%
E. Staff								
1. Program Support	60,358.4	0.0	60,358.4	2,874.2	0.0	2,874.2	0.00%	3.99%
Sub-Total	60,358.4	0.0	60,358.4	2,874.2	0.0	2,874.2	0.00%	3.99%
TOTAL BASELINE COSTS								
Physical Contingencies	1,311,269.4	199,927.5	1,511,196.9	62,441.4	9,520.4	71,961.8	13.23%	100.00%
Price Contingencies	115,270.7	9,996.4	125,267.1	5,489.1	476.0	5,965.1	7.98%	8.29%
TOTAL PROJECT COSTS	466,755.8	48,016.9	514,772.7	12,793.5	1,341.3	14,134.8	9.49%	19.64%
	1,893,295.9	257,940.8	2,151,236.7	80,724.0	11,337.7	92,061.7	12.32%	127.93%

FINANCIAL PLAN (BALOCHISTAN)
RURAL WATER SUPPLY, SANITATION
AND HEALTH PROJECT FOR SINDH,
BALOCHISTAN AND AZAD JAMMU & KASHMIR
(UMBRELLA PROJECT)

	PR '000			US\$ '000			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
I. Investment Costs								
A. Land								
1. Water Supply	4,900.0	0.0	4,900.0	233.3	0.0	233.3	0.00%	0.53%
2. Sanitation & Drainage	1,700.0	0.0	1,700.0	81.0	0.0	81.0	0.00%	0.18%
3. Institutional Development	16,980.0	0.0	16,980.0	808.6	0.0	808.6	0.00%	1.84%
Sub-Total	23,580.0	0.0	23,580.0	1,122.9	0.0	1,122.9	0.00%	2.55%
B. Civil Works								
1. Piped Schemes - New	153,192.0	0.0	153,192.0	7,294.9	0.0	7,294.9	0.00%	16.58%
2. Non-Piped Schemes - New	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
3. Water Schemes Rehab.	26,215.0	0.0	26,215.0	1,248.3	0.0	1,248.3	0.00%	2.84%
4. Sanitation & Drainage	90,900.0	0.0	90,900.0	4,328.6	0.0	4,328.6	0.00%	9.84%
5. Drainage & Sanit. Rehab.	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
6. Institutional Development	40,159.0	0.0	40,159.0	1,912.3	0.0	1,912.3	0.00%	4.35%
Sub-Total	310,466.0	0.0	310,466.0	14,784.1	0.0	14,784.1	0.00%	33.59%
C. Materials, Equip., Vehics.								
1. Program Support	86,678.7	98,964.3	185,643.0	4,127.6	4,712.6	8,840.1	53.31%	20.09%
2. Tech. Assist & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
3. Water Scheme Equipment	79,400.1	96,603.9	176,004.0	3,781.0	4,600.2	8,381.1	54.89%	19.04%
4. Sanitation Equipment	7,204.9	3,695.1	10,900.0	343.1	176.0	519.0	33.90%	1.18%
Sub-Total	173,283.7	199,263.3	372,547.0	8,251.6	9,488.7	17,740.3	53.49%	40.31%
D. Professional Services								
1. Design & Supervision	18,432.1	6,475.9	24,908.0	877.7	308.4	1,186.1	26.00%	2.70%
2. Program Support	6,100.6	5,791.4	11,892.0	290.5	275.8	566.3	48.70%	1.29%
3. Tech. Assist. & Training	54,005.1	126,824.9	180,830.0	2,571.7	6,039.3	8,611.0	70.13%	19.57%
Sub-Total	78,537.8	139,092.2	217,630.0	3,739.9	6,623.4	10,363.3	63.91%	23.55%
E. Staff								
1. Program Support	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
Sub-Total	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
TOTAL BASELINE COSTS	585,867.5	338,355.5	924,223.0	27,898.5	16,112.2	44,010.6	36.61%	100.00%
Physical Contingencies	43,637.7	16,917.8	60,555.5	2,078.0	805.6	2,883.6	27.94%	6.55%
Price Contingencies	169,490.3	93,219.1	262,709.4	4,429.5	2,654.0	7,083.5	37.47%	18.09%
TOTAL PROJECT COSTS	798,995.5	448,492.4	1,247,487.9	34,405.9	19,571.8	53,977.7	36.26%	122.65%

FINANCIAL PLAN (AJ&K)

RURAL WATER SUPPLY, SANITATION
AND HEALTH PROJECT FOR SINDH,
BALOCHISTAN AND AZAD JAMMU & KASHMIR
(UMBRELLA PROJECT)

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	PR '000			US\$ '000			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
I. Investment Costs								
A. Land								
1. Water Supply	10,427.0	0.0	10,427.0	496.5	0.0	496.5	0.00%	1.33%
2. Sanitation & Drainage	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
3. Institutional Development	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
Sub-Total	10,427.0	0.0	10,427.0	496.5	0.0	496.5	0.00%	1.33%
B. Civil Works								
1. Piped Schemes - New	89,771.0	0.0	89,771.0	4,274.8	0.0	4,274.8	0.00%	11.45%
2. Non-Piped Schemes - New	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
3. Water Schemes Rehab.	83,533.0	0.0	83,533.0	3,977.8	0.0	3,977.8	0.00%	10.65%
4. Sanitation & Drainage	4,345.2	0.0	4,345.2	206.9	0.0	206.9	0.00%	0.55%
5. Drainage & Sanit. Rehab.	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
6. Institutional Development	2,604.4	0.0	2,604.4	124.0	0.0	124.0	0.00%	0.33%
Sub-Total	180,253.6	0.0	180,253.6	8,583.5	0.0	8,583.5	0.00%	22.98%
C. Materials, Equip., Vehics.								
1. Program Support	4,731.8	3,205.2	7,937.0	225.3	152.6	378.0	40.38%	1.01%
2. Tech. Assist & Training	193.0	122.9	315.9	9.2	5.9	15.0	38.90%	0.04%
3. Water Scheme Equipment	340,191.8	79,280.2	419,472.0	16,199.6	3,775.2	19,974.9	18.90%	53.48%
4. Sanitation Equipment	527.0	0.0	527.0	25.1	0.0	25.1	0.00%	0.07%
Sub-Total	345,643.6	82,608.3	428,251.9	16,459.2	3,933.7	20,392.9	19.29%	54.60%
D. Professional Services								
1. Design & Supervision	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	0.00%
2. Program Support	19,558.0	69,243.0	88,801.0	931.3	3,297.3	4,228.6	77.98%	11.32%
3. Tech. Assist. & Training	20,179.5	16,349.1	36,528.6	960.9	778.5	1,739.5	44.76%	4.66%
Sub-Total	39,737.5	85,592.1	125,329.6	1,892.3	4,075.8	5,968.1	68.29%	15.98%
E. Staff								
1. Program Support	40,058.2	0.0	40,058.2	1,907.5	0.0	1,907.5	0.00%	5.11%
Sub-Total	40,058.2	0.0	40,058.2	1,907.5	0.0	1,907.5	0.00%	5.11%
TOTAL BASELINE COSTS								
Physical Contingencies	616,119.9	168,200.4	784,320.3	29,339.0	8,009.5	37,348.6	21.45%	100.00%
Price Contingencies	39,297.3	8,410.0	47,707.3	1,871.3	400.5	2,271.8	17.63%	6.08%
TOTAL PROJECT COSTS	243,204.9	56,216.9	299,421.8	6,891.0	1,629.9	8,520.9	19.13%	22.81%
	898,622.1	232,827.3	1,131,449.4	38,101.3	10,039.9	48,141.3	20.86%	128.90%