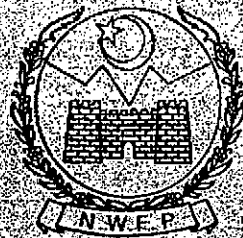


EXTRAORDINARY

GOVERNMENT



REGISTERED NO. P. 111

GAZETTE

North-West Frontier Province

Published by Authority

PESHAWAR, MONDAY, 23RD JUNE, 2003.

**GOVERNMENT OF N.-W.F.P.
IRRIGATION DEPARTMENT.**

NOTIFICATION.

28th September, 2002.

NO. SO (GP)/4-21/2001.—In exercise of the powers conferred by section 75 of the Canal and Drainage Act, 1873 (VII of 1873) read with section 36 thereof, the Government of the North-West Frontier Province is pleased to enhance the current occupier's rates (abiana) being charged for the supply of Irrigation water through various canals system, for irrigation and non-irrigation purposes by 25% with effect from Rabi 2002-2003. In addition, 10% surcharge will also be recovered for non-payment of occupier rate (abiana) in time.

Sd/x-x-x-

(MUHAMMAD SHAHZAD ARBAB)
Secretary to Government of N.-W.F.P.,
Irrigation and Power Department.

SCHEDULE-I
SCHEDULE OF OCCUPIERS RATES FOR NON-IRRIGATION
PURPOSE IN N.W.F.P., WITH EFFECT FROM RABI 2002-2003.

S.No.	Purpose for which water supplied.	Rate.	Exception and Reservations.
1.	Brick making and pipe wall building.	Rs. 9.00 per 100 CFT.	Except within the limits of Civil stations and Cantonments and Municipalities no charge shall be made for water used for the manufacture of brick not subsequently sold or burnt in a kiln or pipe wall building, if taken from a water course or tank lawfully supplied from a canal.
2.	Laying concrete and bricks or stone masonry.	Rs. 7.04 per 100 CFT.	
3.	Manufacturing cement concrete slabe.	Rs. 9.00 per 100 CFT.	
4.	Manufacturing of Charcoal.	Rs. 74.69 per kiln season (crop) provided the kiln is in use.	
5.	Metling road.	Rs. 510.215 per mile.	
6.	Consolidation of kacha service Roads.	Rs. 1506.10 per mile.	(I) Rs. 1506.10 per mile of 5000 ft. per annum from December to September. (II) No additional charges will be levied on these roads for sprinkling water from December to September.
7.	Sprinkling water on roads.		
	(a) Kharif.	Rs. 321.95 per mile.	No charge will be levied where the amount of water used is negligible.
	(b) Rabi.	Rs. 510.25 per mile.	
8.	Watering roads side or avenues trees.		No charge shall be made for water used for watering avenues or roads side trees, grown by villagers along with water courses, fields village roads and within the village abadies.
	(a) Kharif.	Rs. 127.82 per mile.	
	(b) Rabi.	Rs. 254.88 per mile.	
9.	Industries and Railways.	Rs. 364.50 per 10000 CFT.	Subject to minimum of Rs 364.50 per annum.
10.	Local bodies and other public bodies for drinking domestic, but not for commercial purpose.	Rs. 109.36 per 10000 CFT.	
11.	Fish Farms.	Rs. 182.25 (Half the rate of item 9 above)	Applicable for first 3 years, thereafter full rate as per item 9 above.

SCHEDULE - II
SCHEDULE OF WATER RATES APPLICABLE WITH EFFECT FROM RABI 2002-2003.

S.No.	Name of Crop	Per	Category-I of F.I.S.	Category-I of L.I.S.	Category-I of T/Wells	Category-II of F.I.S.	Category-II of L.I.S.	Category-II & III of T/Wells	Category-III of F.I.S.	Category-III of L.I.S.
			Lower Swat Canal, Upper Swat Canal, Muzain FIS, Main Spring Irrigation Scheme, Naranji FIS, Warsak Gravity Canal, Warsak Left Bank Canal, Lower Siran Canal, Upper Siran Canal, Istar Canal, Parghata Irrigation Scheme, Saif Saleh Non-perennial Channel, Gagra FIS, Gandigar Irrigation Scheme, Badwan Kharif Channel, Pehur Canal, Khatoo Dhand FIS, Pir Khel FIS, Sarapula FIS, Ganderi FIS, Tola FIS, Bajkhata FIS, Nepkhetel FIS, Fatehpur FIS	Kot LIS, Kot Jungra LIS, Pir Abad LIS, Old Mayar LIS, New Mayar LIS, Ghoro Minor LIS, Bari Band LIS, Mandori LIS, Jatala LIS, Kalu LIS, Gahri Ismatzai LIS, Droblian LIS, Topi LIS, Tolakan LIS, Tari LIS, Sakhatkot LIS, Kheski LIS, Tari LIS, Nisatta LIS, Kandar Murdara LIS, Warsak Lit Canal, Said Abad LIS, Spokarha LIS, Pir Sadoo LIS, Lund Khawar LIS, Tali, Pir Abad Minor LIS, Washmizai LIS, Badama LIS, Kirra LIS, Allah Dand LIS, Kandar LIS, Bala Garni LIS, Bach Nuliani LIS, Kona LIS, Makran LIS	T/Wells on the Right Bank of Kabul River, T/Wells on the Left Bank of Kabul River, T/Wells in Haripur District, Ziarat Talash, T/Wells, Irrigation, T/Wells in Northern Irrigation Circle & Malakand Irrigation Circle.	Kabul River Canal, Tarda Dam Canal, Kandar Dam Canal, Deppa, Munhammadzai FIS, Kai FIS, Ibrahimzai FIS, Shadi Khel FIS, Chahri Dam FIS, Khil Dam FIS, Sar Pickup weir FIS, Miara Ziarat Pickup weir FIS, Baiwala Pickup Weir FIS, Mangshra Pickup weir FIS, Darwazai Dam FIS, Darsamand FIS, Kokli FIS, Bara Abbas, Khel FIS, Mami Khat FIS, Kundi FIS, Old Paharpur Canal, Chashma Right Bank Canal System.	Tehkal LIS, Zaithi LIS, Bahawal Garh LIS, Disy-5, A High Level Canal CRBC, Irrigation Division Panyala LIS D.I. Khan.	Oasba Bagram T/Well, Ten Nos. T/Wells in Sitar Kra Area, Five Nos. In Jabozai, Malhan, Adezaif, Passani, Bogh Mian Khat, Tappi T/Well, Seven Nos. T/Wells in Barnu, 60 Nos. T/Wells in D.I. Khat, 30 Nos. T/Wells in D.I. Khan, Irrigation T/Well in Central and South Irriga- tion Circles.	3rd Lora Canal, Manwat Canal System, Jhesampur Canal.	Gandhara LIS.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
3.	Gardens Sanctioned Garden & Orchards.	Garden and Orchards per half year.	484.00	IIA	968.00	IIA	968.00	IIA	484.00	IIA	968.00	IIA	968.00	IIA	484.00	IIA	968.00	IIA
4.	Garden, Orchards, Vegetable, including Onion and Turnip, Sugar Beet and Poppy.	Garden, Orchards, Sugar Beet & Poppy per half year, the rest per crop.	405.60	II	811.20	II	811.20	II	405.60	II	811.20	II	811.20	II	232.00	II	464.00	II
5.	Tobacco	Crop.	329.60	III	659.20	III	659.20	III	232.00	III	464.00	III	464.00	III	232.00	III	464.00	III
6. (a)	Rice, Water-Nuts, Lotus Produces.	Crop.	290.40	IV	580.80	IV	580.80	IV	232.00	IV	464.00	IV	464.00	IV	232.00	IV	464.00	IV
(b)	Area for which extra supply is sanctioned for reclamation purposes.	On whole area of Khairi Season.	290.40	IV	580.80	IV	580.80	IV	232.00	IV	464.00	IV	464.00	IV	232.00	IV	464.00	IV
7.	Cotton.	Crop.	290.40	IV	580.80	IV	580.80	IV	178.40	IV	356.80	IV	356.80	IV	178.40	V	356.80	V
8.	Drugs, Dyes, Spices, Chillies, Melon, Fibres, Other than Cotton.	Crop.	290.40	IV	580.80	IV	580.80	IV	232.00	III	464.00	III	464.00	III	232.00	II	464.00	II
9.	Oil Seeds, except Rabi Oil Seed on Khairi Channel.	Crop.	232.00	V	464.00	V	464.00	V	185.60	V	371.20	V	371.20	V	185.60	IV	371.20	IV
10. (a)	Forest Plantation.	Half Year	232.00	VI	464.00	VI	464.00	VI	232.00	IV	464.00	IV	464.00	IV	232.00	III	464.00	III
(b)	Paddock Area sanctioned by Government.	Half Year on the whole area.	232.00	VI	464.00	VI	464.00	VI	232.00	IV	464.00	IV	464.00	IV	232.00	III	464.00	III
(c)	Area for which extra supply is sanctioned for reclamation purpose.	Matured area per harvest.	232.00	VI	464.00	VI	464.00	VI	232.00	IV	464.00	IV	464.00	IV	232.00	III	464.00	III
11.	Wheat, Barley and Oats (except on Khairi Channel).	Crop.	185.60	VIII	371.20	VIII	371.20	VIII	178.40	VI	356.80	VI	356.80	VI	178.40	V	356.80	V

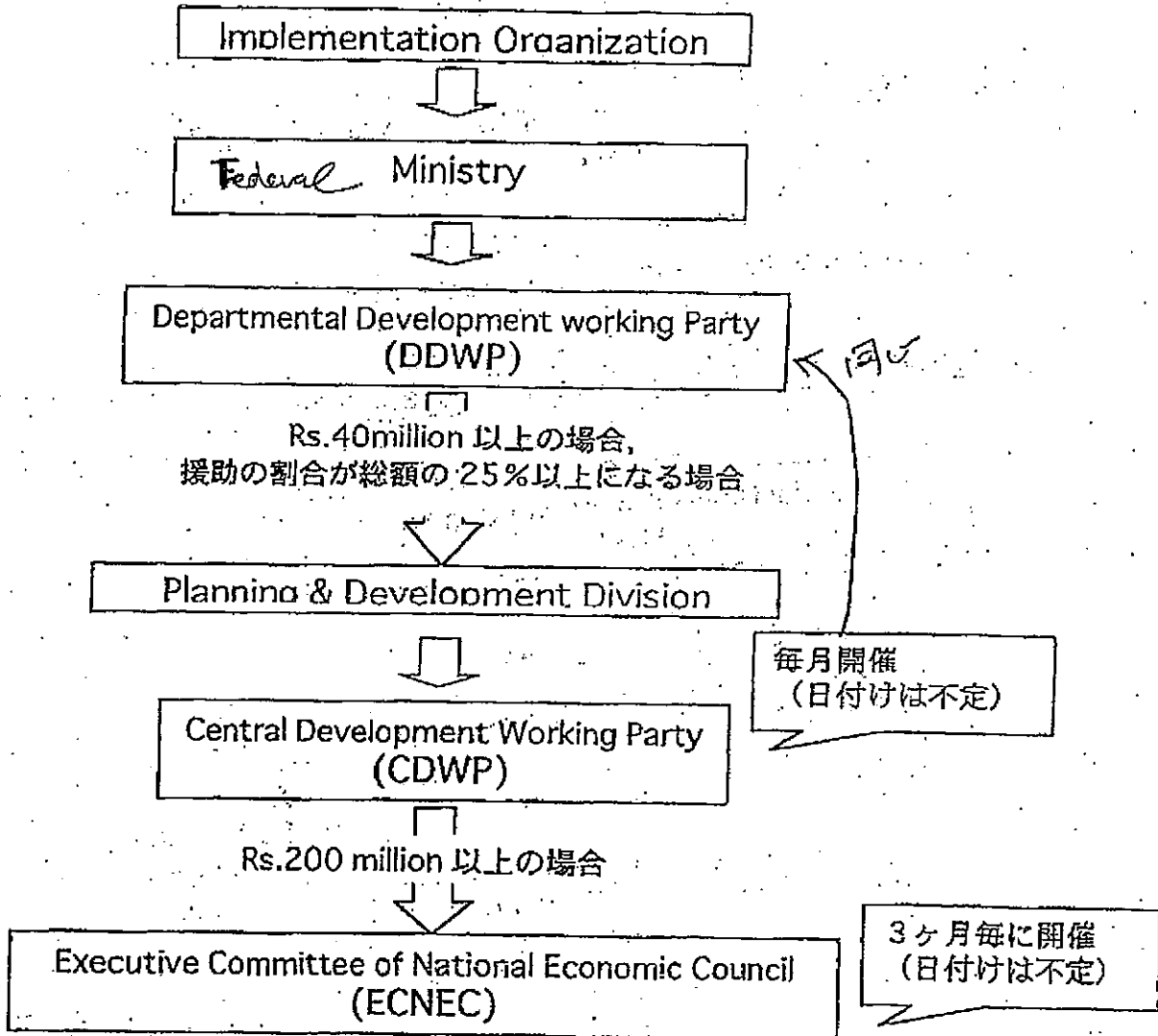
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
12.	Mazze.	Crop.	185.60	VIII	371.20	VIII	371.20	VIII	197.60	VII	275.20	VII	275.20	VI	137.60	VI	275.20	VI	
13.	Un-specified Crops.	Crop.	214.40	VII	428.80	VII	428.80	VII	178.40	VI	356.80	VI	356.80	VI	178.40	V	356.80	V	
14.	Jawar/Channa and Grass, which has received two or more watering and fodder crops.	Grass per half year the rest per crop.	137.60	X	275.20	X	275.20	X	137.60	VII	275.20	VII	275.20	VII	137.60	VI	275.20	VI	
15.	Beja and Grams, Masoor, and Pulses.	Crop.	178.40	IX	356.80	IX	356.80	IX	178.40	VI	356.80	VI	356.80	VI	178.40	V	356.80	V	
16.	Garden, Orchards and Vegetable on Kharif Channel (G. Rabi).	Garden and Orchards per half year.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
17.	All Rabi Crops on Kharif channel including Fodder, but excluding Garden, Orchards and Vegetable.	Per Crop.	185.60	VIII	371.20	VIII	371.20	VIII	99.20	VIII	198.40	VIII	198.40	VIII	99.20	VII	198.40	VII	
<p>Note.— Rate for Rabi Crop under item other than 16 and 17 relate to perennial channel only.</p>																			
18.	(a) Water for ploughing not followed by a crop in the same or succeeding harvest.	—	60.00	XII	120.00	XII	120.00	XII	60.00	X	120.00	X	120.00	X	60.00	IX	120.00	IX	
<p>(b) Village and District Board Plantation Hurts—</p>																			
(i)	Any number of watering in Kharif.	Half Year	99.20	XI	198.40	XI	198.40	XI	99.20	IX	198.40	IX	198.40	IX	99.20	VIII	198.40	VIII	
(ii)	One watering in Rabi.	Half Year	60.00	XII	120.00	XII	120.00	XII	60.00	X	120.00	X	120.00	X	60.00	IX	120.00	IX	
(iii)	Two or more watering in Rabi.	Half Year	99.20	XI	198.40	XI	198.40	XI	99.20	IX	198.40	IX	198.40	IX	99.20	XIII	198.40	XIII	
(c)	Grass with single watering in Kharif or Rabi.	Half Year	60.00	XII	120.00	XII	120.00	XII	60.00	X	120.00	X	120.00	X	60.00	IX	120.00	IX	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<p>Note: Grass given two or more watering falls under item No. 5.</p>																		
19.	(a)	When supply from an escape is intermittent and water is used for ploughing followed by a crop in the same harvest but not followed by any subsequent watering.	60.0	XII	120.0	XII	120.0	XII	60.0	X	120.0	X	120.0	X	60.0	IX	120.0	IX
	(b)	Each watering to cropped area shall be charged at 2/4th of the full water rates leviable on the crop and in addition to the Rabi rates, if chargeable as under, above provided that:																
	(i)	The total amount leviable for any crop shall not exceed full water rate for that crop, and																
	(ii)	Only such watering as benefit the crop shall be charged.																
20.	Additional watering for Rabi Crop on Khairi Channel including gardens, orchards, vegetable and fodder:—																	
	(a)	Single Watering	38.40	XIII	76.80	XIII	76.80	XIII	38.40	XI	76.80	XI	76.80	XI	38.40	X	76.80	X
	(b)	Two or More Watering	60.0	XII	120.0	XII	120.0	XII	60.00	X	120.0	X	120.0	X	60.0	IX	120.0	IX

Notes: (1) The rates shown in the schedule are for flow irrigation. For lift irrigation (Jhallari) at the expenses of irrigators half of these rates will be chargeable.
 (2) Hemp, Indigo, Gowara and Jantar ploughed in as green manure before 15th September are not assessed to water rate.
 (3) Shiji having been sown in standing cotton crop and ploughed in before the 15th February to convert into green manure is not assessed to water rates.

< PC-1 の手続きの流れ >

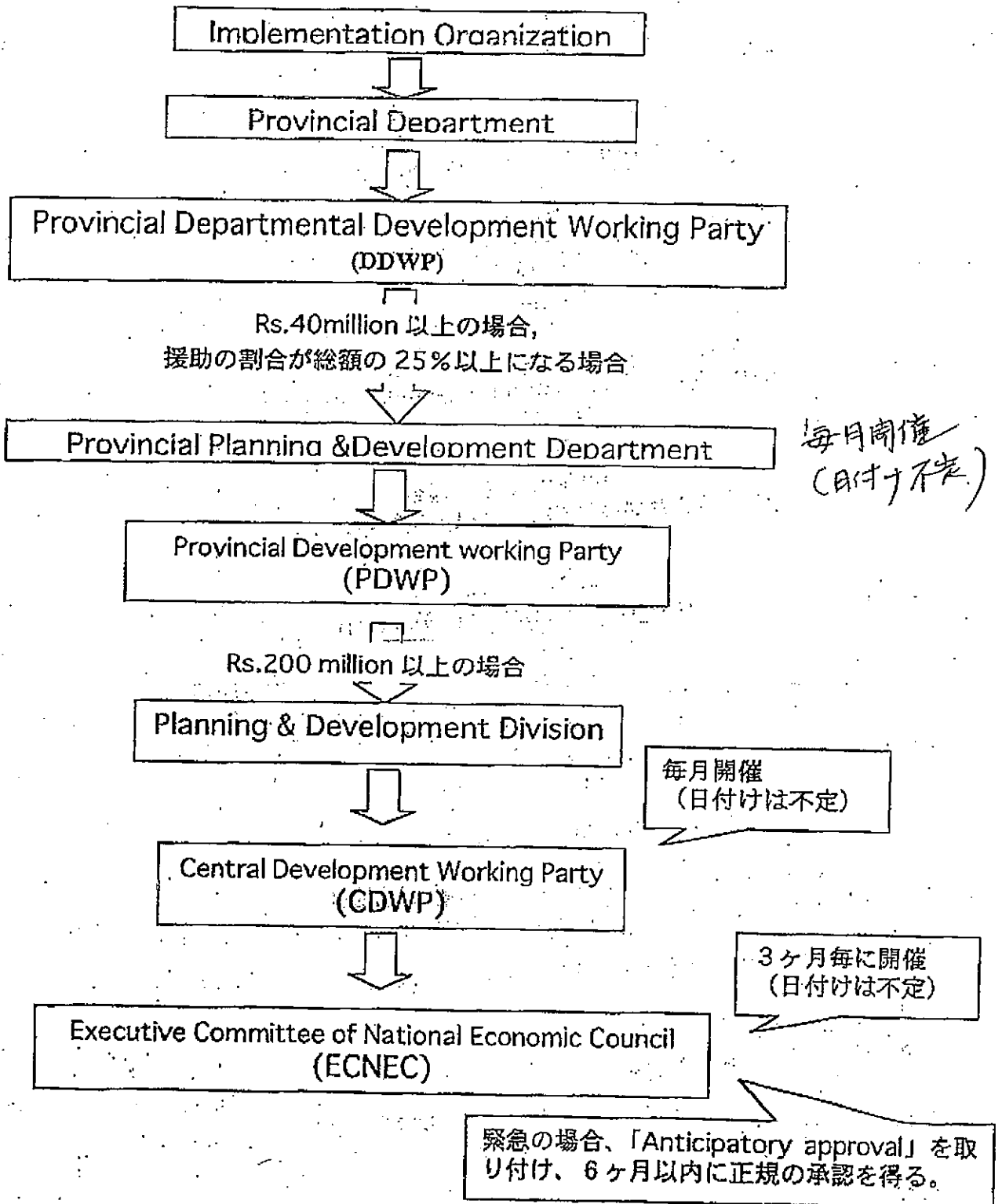
1. Federal Projects



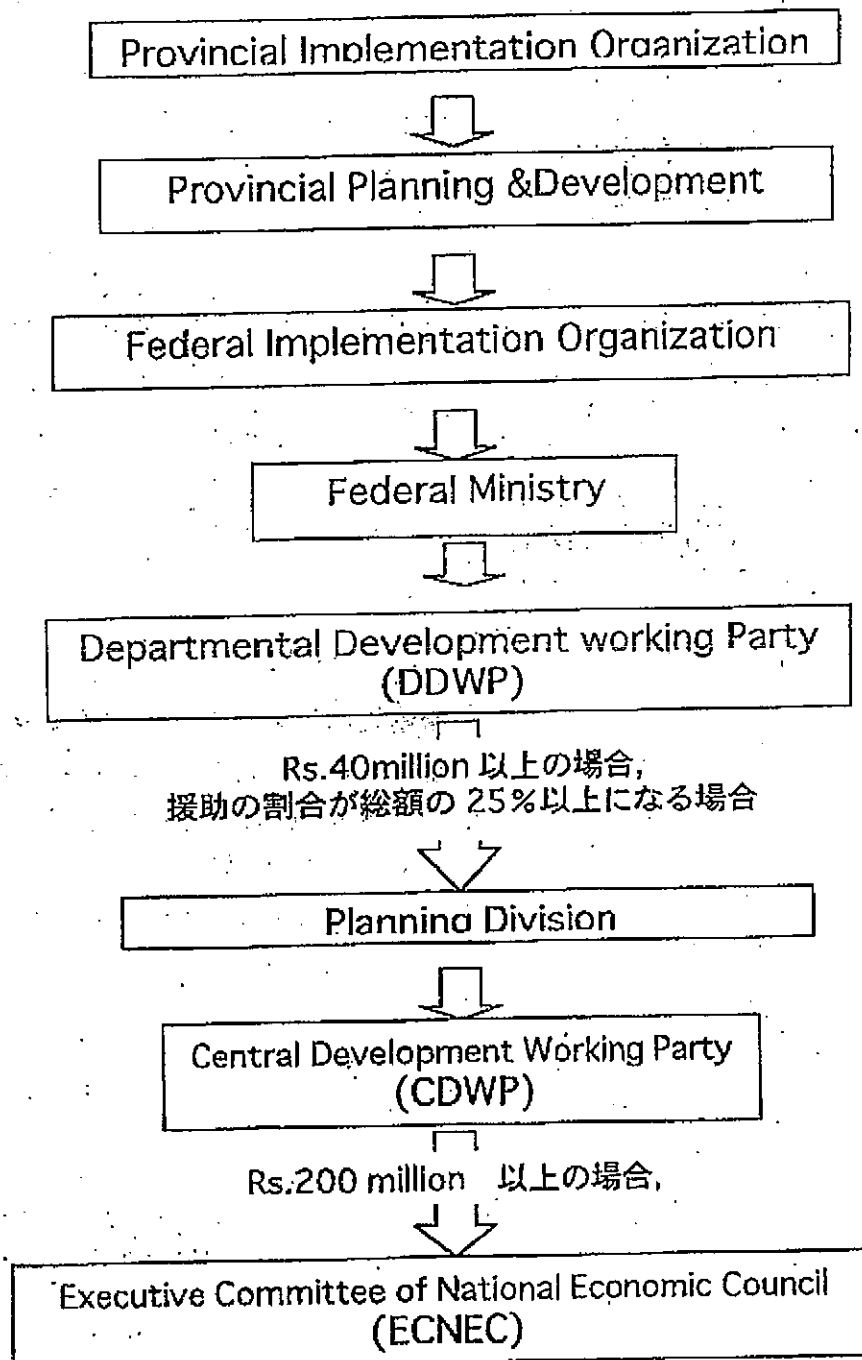
[共通事項]

- 外国に援助を求める場合は、PC-1の前に、「Concept Clearance Paper」を作成し、Planning & Development Divisionの承認を得る必要がある。
- EADは、プロジェクトの承認後でなければ、援助機関と合意文書を交わしてはならないことになっている。
- プロジェクトの承認後、経費支出のためには「Administrative Approval」が必要。

2. Provincial Projects



3. Projects on Federal and Provincial (Umbrella Projects)



List of Requested Data/Information
(NWFP Small Dams for Irrigation Construction Project)

JICA Preparatory Study Team

JICA Preparatory Study Team would like to ask the following data/information in order to carry out the study works.

(Note)

1. Fill up columns in the following attached list
 - Source of data/information and name of person in charge to handle data/information
 - Title of materials
2. Please provide Study and/or Construction reports of similar structures constructed near the proposed sites, if there are available, in addition to the requested data/information

List-1

I. Natural Condition

Item	Description	Availability		Title of Materials
		Availability	Source (Incl. person in charge)	
A. Topographic Map				
1. Topographic Map for Each site				
	- Covering proposed and existing irrigation area, dam site and reservoir area - Scale of 1/50,000, 1/25,000, 1/10,000, 1/5,000 etc. - Price of Map			
1.1 Palai Dam		Yes	Feasibility report	Layout Plan. Fig 6.1 command area map sheet 1 of 4. 4 to 4
1.2 Kundal Dam		Yes	Feasibility report	Volume 3
1.3 Sanam Dam		Yes	Feasibility report	Layout plan Fig S.D-I, 20,3,13
2. Topographic Map of Major Structure Site				
	- Scale of 1/5,000, 1/1,000, 1/500 etc.			
2.1 Palai Dam		Yes	Feasibility report	Fig 6.3 (a) 6.4, 6.5, 6.6, 6.7, 6.8
2.2 Kundal Dam		Yes	Feasibility report	Volume
2.3 Sanam Dam		Yes	Feasibility report	S.D 14, 16, 17, 18, 19
3. Longitudinal section of the river				
	- Scale of 1/500 in vertical and horizontal			
3.1 Palai Dam		Yes	Feasibility report	Layout plan
3.2 Kundal Dam		Yes	Feasibility report	Volume-3
3.3 Sanam Dam		Yes	Feasibility report	S.D.1 (3.1-3.2)
4. Survey Data				
	List and data of triangulation net for the project sites - List and data of leveling net for the project area - List and data of Bench Marks near project sites			
4.1 Palai Dam		Yes	ACE (Pvt) Ltd	Feasibility report

List-2

Item	Description	Availability		Title of Materials
		Availability	Source (Incl. person in charge)	
4.2 Kundal Dam		Yes	Babie Group 25 Bothervell Street Glasgow G 27 MX	Feasibility Report
4.3 Sanam Dam		Yes	NDC-EMC	Feasibility Report
5. Aerial Photograph	- Scale of 1/20,000, 1/10,000, 1/5,000 etc.			
5.1 Palai Dam		No		
5.2 Kundal Dam		No		
5.3 Sanam Dam		No		
6. Capable Local Contractors	- For Aerial Photogrammetric Mapping - For Ground Survey	Yes	Survey of Pakistan Local Consultants.	
7. Current process	- For Aerial Photogrammetric Mapping - For Ground Survey		Survey of Pakistan Local Consultants	
B. Geological and Hydro-geological Data				
1. Published Report on earthquake or volcanic activities	- Extensive published report around project sites or NWFP - List of strength and epicenter of earthquake occurred in Pakistan and surrounding countries	Yes	Metrological Dept: Peshawar	
2. Land Use Map	- Extensive land use map including project sites		F.S. & WAPDA	Land use survey MAP
3. Publish Map on Rock and Soil Classification	- Extensive geological map with geological structures, distribution of soil and their explanations for project sites with price		Not available	
4. Geological Data	- All studied data by Consultants for PC-1 report			
a) Geological Drawings and Geological Report	- Plans, profiles and sections for project sites		Feasibility report	

List-3

Item	Description	Availability		Title of Materials
		Availability	Source (Incl. person in charge)	
b) Result of Geological Investigation Work	- Geological Investigation reports for project sites			
4.1 Palai Dam		Yes	Feasibility report	Chapter 3
4.2 Kundal Dam		Yes	Feasibility report	Annex-F
4.3 Sanam Dam		Yes	Feasibility report	
5. Hydrogeology Data	- Extensive hydrogeological data for Jindi Hwar River, Swat River (Asbanar River) and Bagda Khwar River			
a) Observed Underground Water Level				
b) Spring Spots and Well	- With depth or height of water table			
c) Water Examination				
d) Previous Report	- Concerning to hydrogeology surrounding of project sites			
5.1 Palai Dam		Yes	Feasibility report	Chapter 2
5.2 Kundal Dam		Yes	Feasibility report	Annex-B
5.3 Sanam Dam		Yes	Feasibility report	
6. Construction Materials	- Quarry and Concrete aggregates sites			
a) Location and Material Test Results				
b) Result of Laboratory Tests				
6.1 Palai Dam		Yes	Feasibility report	Chapter 8 Appendix I
6.2 Kundal Dam		Yes	Feasibility report	Annex-F
6.3 Sanam Dam		Yes	Feasibility report	Fig 3.4

Item	Description	Availability		Title of Materials
		Availability (Incl. person in charge)	Source (Incl. person in charge)	
7. Price of Published Map		Yes	Survey of Pakistan	G.T Maps
8. Capable Local Contractors	<ul style="list-style-type: none"> - For Drilling Work - For Geophysical Investigation such as Seismic Investigation - In-situ Test and laboratory Test - Audit Investigation - Soil Mechanics - Engineering and Consulting 	Yes	Local Contractor Local Consultants Local Consultants contractor/consultants Engg: University Pesh Local Consultants	List of consultant supplied to the mission.
9. Current prices				
a) Geological Investigations	- The above mentioned items from 6.1 to 6.6		Depends on nature and extent of investigations	
b) Wages of Engineer, Operator and Labours				
c) Mobilization and Demobilization	- The above mentioned items from 6.1 to 6.6			
C. Hydrological and Meteorological Data				
1. Run-off	<ul style="list-style-type: none"> - All available data at water-level gauging stations including location maps - Converted run-off data at the dam sites 			
1.1 Palai Dam		Yes	Feasibility report	Chapter 2
1.2 Kundal Dam		Yes	Feasibility report	Annex-B
1.3 Sanam Dam		Yes	Feasibility report	
2. Flood Flow	<ul style="list-style-type: none"> - By statistical method - Record maximum flood 			
2.1 Palai Dam		Yes	Feasibility report	Chapter 2
2.2 Kundal Dam		Yes	Feasibility report	Annex-B

List-5

Item	Description	Availability		Title of Materials
		Availability	Source (Incl. person in charge)	
2.3 Sanam Dam		Yes	Feasibility report	
3. Sedimentation	- Suspended material and bed material - Similar data of NWFP and Pakistan in recent			
3.1 Palai Dam		Yes	Feasibility report	Chapter 2
3.2 Kundal Dam		Yes	Feasibility report	Annex-B
3.3 Sanam Dam		Yes	Feasibility report	
4. Evaporation	- Monthly average. (observed and estimated evaporation) - Similar data of NWFP and Pakistan in recent			
4.1 Palai Dam		Yes	Feasibility report	Chapter 2
4.2 Kundal Dam		Yes	Feasibility report	Annex-B
4.3 Sanam Dam		Yes	Feasibility report	
5. Precipitation	- All available precipitation data for wet and dry season including location map of stations (Provincial capital, District, Air port)			
5.1 Palai Dam		Yes	Feasibility report	Chapter 2
5.2 Kundal Dam		Yes	Feasibility report	Annex B
5.3 Sanam Dam		Yes	Feasibility report	
6. Weather	- Temperature, humidity and thunder etc. (same as precipitation)			
6.1 Palai Dam		Yes	Feasibility report	Chapter 2
6.2 Kundal Dam		Yes	Feasibility report	Annex-B
6.3 Sanam Dam		Yes	Feasibility report	

List-6

Item	Description	Availability		Title of Materials
		Availability	Source (Incl. person in charge)	
7. Data of Water	- Water quality, water temperature the above mentioned rivers - Existing data of rivers near project sites			
7.1. Palai Dam		Yes	Feasibility report	Chapter 2
7.2. Kundal Dam		Yes	Feasibility report	Annex-B
7.3. Sanam Dam		Yes	Feasibility report	

II. Environmental and Social Condition

Item	Description	Availability		Title of Materials
		Availability	Source (Incl. person in charge)	
1. An environmental report (EIA or IEE) of the project.				Attached
2. An environmental report of a similar project for dam construction or flood control in NWFP.				
3. Data of national parks or protected areas in NWFP (including a location map)				
4. Socio-economical data of households in the target areas or general NWFP, e.g. Federal Bureau of Statistics (FBS). 2000, PIHS: Pakistan Integrated Household Survey, Round 3: 1998-99. Islamabad: FBS.				
Government of Pakistan. Population and Housing Census, 1981 and 1998				
5. Overview of customary laws in the target areas, e.g. Ayub, Salar Muhammad. The Manual of Jirga Laws with Frontier Crimes Regulations (No. III of 1901). Lahore: Irfan Law Book House.				

Questionnaire

(NWFP Small Dams for Irrigation Construction Project)

JICA Preparatory Study Team

PLS fulfill the following questions and submit the answers to the JICA Study Team
(Note: clarify every sources of data/information referred in the answers)

I. Outline of the Project Implementation

1. Scope of the requested Grant Aid (tick an expected financial source for each work)

No	Works	Financial Source								
		Palai Dam			Kundal Dam			Sanam Dam		
		Gr	Go	Fa	Gr	Go	Fa	Gr	Go	Fa
1	Land acquisition		√			√			√	
2	Dam	√			√			√		
3	Spillway & outlet structure	√			√			√		
4	Feeder canal	√			√			√		
5	Left & Right canals	√			√			√		
6	Water courses	√	√	√	√	√	√	√	√	√
7	Farm-land reclamation	√		√	√		√	√		√

(Note) Gr: Grant
Go: Government of Pakistan (Federal & Provincial)
Fa: Beneficial farmers

2. Responsible/supervisory government agencies of works in the Project

(1) Clarify the agencies

No	Works	Government Agencies
1	EIA survey 4 months	Director General EPA NWFP.
2	Land acquisition/re-settlement 3 months	Provincial Revenue Deptt:
3	Dam construction 24 months	Small Dams, Organization, Irrigation and Power Department (NWFP)
4	Irrigation main canals construction 18 months	Small Dams Organization, Irrigation and Power Department (NWFP)
5	Farm-land reclamation 22 months	ONFWM Directorate wing of Agricultural Deptt: NWFP.
6	Organizing water users (WUA) 8 months	As in 5 above.
7	Water courses construction 9 months	As in 5 above.
8	Agricultural extension/farm support continues actively.	Director General of Agriculture extension NWFP.

<p>(2) Explain, how do the agencies other than the Small Dams Organization know the requested Project? Are they well prepared to take their responsibilities in the Project? How the Small Dams Organization make further coordination arrangements to accelerate their participation in the Project?. The concerned agencies knows their job very well and close coordination well be maintained with these agencies during and after.</p>	<p>(2) Due to the visit of JICA Mission to NWFP and meeting with officials of Agriculture Department, the On Farm Water Management Directorate came to know about the requested project.</p> <p>The Directorate of On Farm Water Management NWFP is well prepared to take their responsibilities in the project.</p>
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3. Show an integrated project implementation schedule for each Project site (break-down the works mentioned in 2. (1) into several stages and arrange the stages sequentially in a monthly schedule chart).

(An image of the chart) For all the Three Dams

Attached as Annex-IV.

II. Basic Data about Project Sites' Condition

1. Hydrological Data (Rainfall (Precipitation), River flow discharge, Flood data)

Dam Site	Palai	Kundal	Sanam
Availability of hydrological Data : Rainfall (Precipitation) : River flow : Flood data	As per feasibility report.	As per feasibility report.	As per feasibility report.
Available department name (data source)	Collected by M/S ACE consultants	Collected by M/S Babapti Shah consultant England	M/S NDC consultants Lahore.
	Palai	Sanam	Kundal
Available data period	1962-1991	1971-1990	1962-1991
Planning of hydrological investigation : Rainfall gauging station : Hydrometry	As above	As above	As above
Cost of hydrological investigation : Unit price x QTY	Not available	Not available	Not available

2. Detailed Foundation Investigation

Dam Site	Palai	Kundal	Sanam
Availability of Geotechnical Data : Boring : Permeability test : Quarry site : Construction material survey	Already carried out as per feasibility report	Already carried out as per feasibility report.	Hard rock on both the abutments and in the nullah bed is available and may not need detail geotechnical investigations

Available department name (data source)	Small Dams Organization	Small Dams Organization	Small Dams Organization
Planning for Detailed foundation investigation at Dam site and Quarry site	Already carried out as per feasibility report	Already carried out as per feasibility report	Already carried out as per feasibility report
Cost of Detailed foundation investigation : Unit price x Quantity	Attached Annex-V	Attached Annex-V	Attached Annex-V

3. Seismic Acceleration

Dam Site	Palai	Kundal	Sanam
Availability of Seismic Data	Yes	yes	Yes
Available department name (data source)	Metrological Deptt: Peshawar	Metrological Deptt: Peshawar	Metrological Deptt: Peshawar
Available data period	To confirm-?	To confirm-?	To confirm-?

4. Topographic Survey

Dam Site	Palai	Kundal	Sanam
Availability of topographic map for dam site and quarry site	Available & handed over	Available & handed over	Carried out by the consultants at the feasibility stage
Available department name (data source)	Small Dams Organization, Peshawar	Small Dams Organization	M/S NDC consultants Lahore Tell# 042/5867773
Planning for topographic investigation at dam site, quarry site and related area	As per feasibility report	As per feasibility report	As per feasibility report
Cost of topographic investigation : Unit price x Quantity	Not known as the same is carried by the consultants.	Not known as the same is carried by the consultants.	Not known as the same is carried by the consultants.

5. Present Condition of the Project Site Areas

(1) Dam Reservoir Area

Information		Palai	Kundal	Sanam	
Total Area (acre)		145	300	45	
1	Number of community settlements	Nil			
2	Number of houses	Nil	10 Nos	2 No. water mills	
3	Number of living/settled population	Nil	80	Nil	
4	Landholdings				
	a. Number of land owners other than the federal/provincial governments	The details will be known when land is acquired for construction of the project.			
	b. Total area owned by the land owners other than the governments (acre)				
	c. Total area owned by the federal/provincial governments (acre)				
5	Land use (acre)				
	a. Farm-land (including fallow farm-land)				
	b. Forest & grassland/grazing-land				
	c. Waste land				Cultivable waste land
					Un-cultivable waste land
	d. Settlement area				
	e. River bed				
	f. Others				
6	Roads (km)	-	-	-	
7	Public facilities	-	-	-	

(2) Irrigation Command Area

Information		Palai	Kundal	Sanam
Total Area (acre)		4600	3000	1700
1	Number of community settlements	Not yet assessed	Not yet assessed	Not yet assessed
2	Number of houses	-do-	-do-	-do-
3	Number of living/settled population	-do-	-do-	-do-
4	Landholdings	4-5	4-5 Acres	4 Acres Avg
	a. Number of land owners other than the federal/provincial governments	1050	660	380
	b. Total area owned by the land owners other than the governments (acre)	4600	3000	1700
	c. Area owned by the federal/provincial governments (acre)	Nil	Nil	Nil
5	Land use (acre)			
	a. Farm-land (including fallow farm-land)	4600	3000	1700
	b. Forest & grassland/grazing-land	Nil	Nil	Nil
	c. Waste land	4600	3000	1700
		Cultivable waste land	Not measured	Not measured
		Un-cultivable waste land	Not measured	Not measured
	d. Settlement area	Not measured	Not measured	Not measured
	e. River bed	-do-	-do-	-do-
	f. Others	-do-	-do-	-do-
6	Roads (km)	Nil	3 KM	1 KM
7	Public facilities	Nil	Nil	Nil

III. Dam Construction Plan

1. Return Period

Dam Site	Palai	Kundal	Sanam
Type of Dam	CFRDI with clay core	Rockfill with Clay core	Rockfill with Clay core
Selection of Return Period	200 years but to be 1000 years	1000 years	1000 years
Concerned department name	M/S ACE consultants Lahore	Babaptishah England	M/S NDC consultants Lahore
Design Flood Discharge	24777 CS	50400 CS	16629 cs

2. Time Required for Completion

Dam Site	Palai	Kundal	Sanam
Type of Bidding	Asian Development Bank standard	Asian Development Bank standard	Asian Development Bank standard
Concerned department name	Small Dams Organization	Small Dams Organization	Small Dams Organization
Period of Stages	0.6 months	0.6 months	0.6 months
: D/D (Investigation, design, T/D)	01 months	01 months	01 months
: PQ	Available	Available	Available
: Tendering	02 months	02 months	02 months
: Construction	24 months	24 months	24 months
Total Period	33 months	33 months	33 months

3. Project Cost Estimates

F.O 161.877

172.468

8.372

Dam Site	Palai	Kundal	Sanam
General fee (Administration, Accommodation and Building, Water supply and dewatering works, Electric power supply, Operation of facilities for medical services, Maintenance of Access road, Temporary road, Other temporary work, about 20 %) is included or not ?	Rs. 5.63 (M) Included in the approved PC-I and 20% (Rs 1.13 M) not included.	Rs. 16.953 (M) Included in the approved PC-I and 20% (Rs 3.39 M) not included.	Rs. 11.883 (M) Included in the approved PC-I and 20% (Rs 2.277 M) not included.
Available department name (data source)	Small Dams Organization	Small Dams Organization	Small Dams Organization
Estimated above cost	25.411	29.26	Rs. 14.732 (M)
Total Project cost	234.78	218.681	Rs. 108.987 (M)

4. Priority of Project site

Dam Site	Palai	Kundal	Sanam
Priority of Project site	All the three are priority projects.		
Reason for Priority The project are pending execution for the last almost 15 years and now the local are exerting socio politic pressure on the Govt.	The areas are water scarce and the availability of water for irrigation will result in irrigated agriculture leading to increased crop production resulting in poverty alleviation		
Concerned department name	Small Dams Organization	Small Dams Organization	Small Dams Organization
Revised Project cost	Rs. 234.78 (M)	Rs. 218.681 (M)	Rs. 108.987 (M)

5. Explain present situation of Dams being constructed for irrigation in NWFP. Attach Annex-I

6. Explain present development policy and plan for water management in NWFP. Attach Annex-II

IV. On-Farm Support Plan

1. Since a participatory irrigation management system has been introduced under the present government policy, it is expected that a part of responsibilities of irrigation O&M is going to be transferred to farmers in NWFP. How is the progress of the introduction of participatory management system in NWFP?

(1) Roles and responsibilities in the present regulations (tick an appropriate body)

Roles and Responsibilities		Primary/Main Canal Level		Distributaries Canal Network Level		Water Course Level	
		Govt.	Farmers	Govt.	Farmers	Govt.	Farmers
1	Regulation of water supply	✓		✓		✓	
2	Maintenance of irrigation facilities	✓		✓			✓
3	Abiana assessment	✓		✓		✓	
4	Abiana collection	✓		✓		✓	
5	Financing to O&M of irrigation facilities	✓		✓		✓	
6	Conflict/dispute solution	✓		✓		✓	
		✓		✓		✓	

II. PIDA SYSTEM

Roles and Responsibilities		Primary/Main Canal Level		Distributaries Canal Network Level		Water Course Level	
		Govt.	Farmers	Govt.	Farmers	Govt.	Farmers
1	Regulation of water supply	✓			✓		✓
2	Maintenance of irrigation facilities	✓			✓		✓
3	Abiana assessment		✓		✓		✓
4	Abiana collection		✓		✓		✓
5	Financing to O&M of irrigation facilities		✓		✓		✓
6	Conflict/dispute solution	✓	✓		✓		✓

Northern Irrigation Circle Mardan covering the command of upper Swat, Lower Swat canal and small flow & lift irrigation schemes has been notified as Area Water Board under PIDA Act. The formation of farmers organization is in progress. So far 25 No farmers organization have been formed against the total of 117 Nos. The management of four minor canals have been transferred to four FOS covering an area of 11489 acres. The transition period from PID to PIDA is up to year 2007. Upon the successful transfer of management to the FOS in Mardan area water Board the transfer of management to other irrigated area will be extended. As when the construction of the dam is started the formation of farmers organization will be started for all the three projects and will be completed within a period of six months.

(2) Actual situation (tick an appropriate body)

Roles and Responsibilities		Primary/Main Canal Level		Distributaries Canal Network Level		Water Course Level	
		Govt.	Farmers	Govt.	Farmers	Govt.	Farmers
1	Regulation of water supply	✓		✓		✓	
2	Maintenance of irrigation facilities	✓		✓			✓
3	Abiana assessment	✓		✓		✓	
4	Abiana collection	✓		✓		✓	
5	Financing to O&M of irrigation facilities	✓		✓		✓	
6	Conflict/dispute solution	✓		✓		✓	

(3) How many farmers' groups (WUA) are organized under the present O&M transfer policy in NWFP?

		Number
1	Total number of organized farmers groups for irrigation O&M in NWFP	25
2	Total number of organized farmers in NWFP	17943
3	Total acreage of command area under the management of the farmers groups (4 groups)	2727
4	Total number of beneficial farmers in the present irrigation schemes	6,50,000 Approximate
5	Total acreage of command area in the present irrigation schemes	2.27 (M) acres

(4) Please provide concerned guidelines/regulations with organizing farmers into farmers groups for irrigation O&M, if there are (Attached)

2. How to organize beneficial farmers in order to promote the participatory irrigation management system in the Project sites? As per No. 4 above

(1) Show a procedure flow chart from dissemination to set-up farmers' groups

N.A

(2) Expected number of farmers' groups (WUA) to be organized in the Project sites

		Number		
		Palai	Kundal	Sanam
1	Number of farmers' groups (WUA)	30	51	27
2	Total number of farmers to be organized	1050	660	380

<p>(3) What are the roles and responsibilities of the Small Dams Organization?</p>	<p><u>Rules and responsibilities</u></p> <p>Small Dams Organization is responsible for the Planning, Design and Construction of small dams projects. On completion the projects are transferred to O&M (Wing) of the Irrigation Department for future operation and maintenance</p>
<p>(4) What are the roles and responsibilities of PIDA?</p>	<p>The transfer of (O&M) management to beneficiaries is under transition. Farmers organization will be formed in the project areas by PIDA. The main dam and appurtenant structures including main canal will be maintained by PIDA. The distribution will be managed by farmers groups. Abiana will be assessed by the farmers organization. Part of the water charges collected will be retained by FOS for Maintenance and Operation of the system and part will be paid to PIDA for the O&M of Main Dam, appurtenant structures and Main Canal.</p>

<p>(5) What are the roles and responsibilities of On-farm Water Management, Agriculture ONFM Department?</p>	<p><u>Roles and responsibilities of OFWM</u></p> <ul style="list-style-type: none"> • Improving Water Management Technology and institutional Arrangements. • Increasing agriculture production by effective use of irrigation water. • To improve the overall working efficiency of the irrigation system by necessary training. • Transferring the responsibilities of operation and maintenance of the system from Government to beneficiaries in collaboration of Provincial Irrigation Department/PIDA. • Capacity building of farmer groups and fresh staff of OFWM Department. <p><u>Responsibilities.</u></p> <p>The following are the main responsibilities of OFWM</p> <ul style="list-style-type: none"> • Organization of farmers in the form of WUAs at watercourse level. • Rehabilitation/renovation of watercourse. • Promotion of Irrigation Agronomy Activities. • Construction of Water Storage Tanks in low discharge areas. • Development of rain water harvesting schemes in rain tracts. • Installation of Micro Irrigation Schemes i.e. Sprinkler, Drip etc. • Pilot Project for Participatory Irrigation management (PIM) at distributary level. • Training of manpower in OFWM. • Coordination with Research, Extension and field wings of Agriculture Department for transfer of technology regarding irrigation Water Management.
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- (6) Is there an existing plan to support farmers' groups in the Project sites for lining water courses by the provincial or federal government? If yes, explain the detailed contents of the plan. If not, is it possible to make the support plan when the Project will be implemented? No

3. Show the cropping calendar before and after the Project for each command area.

(1) Before the Project (Present cropping calendar)

Name of dam site: Palai

Crops	Planted Area (acre)	Months												
		R	R	R	K	K	R	K	K	K	R	R	R	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
MAIZE	340							←	→	→	→	→		
PULSES	34		←	→	→	→	→	→	→	→	→	→		
TOBACCO	5		←	→	→	→	→	→	→	→	→	→		
TOMATO	50	←											→	→
ONION	25	←											→	→
WHEAT	1625	←	→	→	→	→						←	→	→
BARLY	275	←	→	→	→	→						←	→	→
FODDER	5	←											→	→

(2) After the Project (Future cropping calendar)

Name of dam site: Palai

Crops	Planted Area (acre)	Months												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
MAIZE	1426							←	→	→	→	→		
PULSES	138	←									→	→		
RICE	230	←											→	→
VEGETABLES	598	←											→	→
ORCHARDS	46	←											→	→
WHEAT	2208	←	→	→	→	→						←	→	→
SUGARCANE	460	←											→	→
FODDER	368	←											→	→

(1) Before the Project (Present cropping calendar)

Name of dam site: Kundal

Crops	Planted Area (acre)	Months											
		R	R	R	K	K	R	K	K	K	R	R	R
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MAIZE	1537						←	→					
TOBACCO	54		←	→									
VEGATABLE	54	←	→										→
ORCHERD	37.8	←	→										→
WHEAT	2281	←	→									←	→
OTHER	276	←	→									←	→
FODDER	2642	←	→										→

(2) After the Project (Future cropping calendar)

Name of dam site: Kundal

Crops	Planted Area (acre)	Months											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		MAIZE	1050						←	→			
SUNFLOWER	300			←	→								
SUGARCANE	900	←	→										→
VEGETABLES	300	←	→										
ORCHARDS	600	←	→										→
WHEAT	1200	←	→									←	→
SUGAR BEAT	900	←	→						←	→			→
FODDER	450	←	→										→

(1) Before the Project (Present cropping calendar)

Name of dam site: Sanam

Crops	Planted Area (acre)	Months											
		R Jan	R Feb	R Mar	K Apr	K May	R Jun	K Jul	K Aug	K Sep	R Oct	R Nov	R Dec
MAIZE	340							←	→				
PULSES	34		←	→									
RICE	28							←	→				
VEGATABLE	34		←	→									
ORCHARD	34	←	→										
WHEAT	1020	←	→									←	→
OIL SEED	85												
FODDER	51	←	→									←	→

(2) After the Project (Future cropping calendar)

Name of dam site: Sanam

Crops	Planted Area (acre)	Months											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MAIZE	408							←	→				
PULSES	204				←	→							
RICE	204							←	→				
VEGETABLES	88.0	←	→										
ORCHARDS	88	←	→										
WHEAT	952	←	→									←	→
BARLEY	95.0	←	→									←	→
FODDER	88	←	→										
TOMATO	82		←	→									

4. Calculate "irrigation water requirements" for the command areas of the Project based the cropping calendars prepared in 8(2). Please show the procedure of the calculation and basic data (meteorological, botanical, soil, irrigation efficiency, etc.) used for the calculation.

5. Show the average yield (production/acre) of major crops around the Project sites

Crop	Yield (md/acre) in (Year: Av year)					
	Palai		Kundal		Sanam	
	Irrigated	Non-irrigated	Irrigated	Non-irrigated	Irrigated	Non-irrigated
Wheat	28	8.4	35.42	11.6	30	9.6
Maize	28		50.6	11.64	30	8
Rice				-	12	5
Barley		9.0	-	-	28	9
Pulses (Rabi)	9.6	-		5		
Pulses (Kharif)	9.6	4.4		5	15	4.4
Fodder (Rabi)	560	28	500	30	350	280
Fodder (Kharif)	400	28	380	30	350	
Sugarcane	800	-	560			
Sugar beet	-	-	583			
Sunflower	9.6	-	202.4			
Tobacco	20	12	24.29			
Onion		20				
Tomato	-	126			120	
Vegetable	150		151.82			
Orchard	140		140			

4. Agricultural extension and development plans

(1) Describe the agricultural development policy at Provincial and Districts level

- NWFP Province
- Charsadda District
- Swabi District
- Lower Dir District

(2) Describe the present agricultural extension system and activities in and around the project sites

- Palai (Charsadda Dist.)
- Kundal (Swabi Dist.)
- Sanam (Lower Dir Dist.)

(3) Are there any projects (on-going & planned) to promote agriculture in and around the Project sites, or to support the requested Project? Describe the details of the project contents, if there are. Annex-III

(4) NWFP government has requested technical cooperation to JICA. Does the NWFP government expect any contribution of the technical cooperation to the requested dam Project? Describe the detailed contents of the technical cooperation, if the government expects the contribution.

The Govt. of NWFP has requested Technical Assistance for development studies for the feasibility study of small dams in Southern NWFP costing Rs.42.980 (M) with local component of Rs. 2.96 (M).

The PC-II Proforma approved by the Federal Govt. on 18.9.04 has already been transmitted to the Embassy of JAPAN through Economic Affairs Division Govt. of Pakistan Islamabad.

Attached as
Annex-III

V. Environmental and Social Consideration

1 Does the construction of each dam include any of involuntary resettlement?

1.1 Palai

Yes

No

Attached

If yes, please describe number of the households and persons to be resettled.

(scale: households persons)

1.2 Kundal

Yes

No

Attached

If yes, please describe number of the households and persons to be resettled.

(scale: 10 households 80 persons) 2 No. Small Water Mills.

1.3 Sanam

Yes

No

Attached

If yes, please describe number of the households and persons to be resettled.

(scale: households persons)

2 Does the land submerged under water by the construction of each dam contain any farmland or land utilized for any other purposes?

2.1 Palai

Yes

No

If yes, please specify type of land and its size.

Farmland (scale: hectors)

Others (-) (scale: - hectors).

2.2 Kundal

Yes

No

If yes, please specify type of land and its size.

Farmland (scale: 121.45 hectors)

Others (10 No Houses) (scale: hectors)

2.3 Sanam

Yes

No

If yes, please specify type of land and its size.

√Farmland (scale: 18.21 hectares)

√Others (2 No Small Water Mills) (scale: hectares)

- 3 Have the NWFP provincial government considered alternatives to construction of the three dams for agricultural development, or for uplift of the living standard in the areas?

√Yes: Please describe outline of the alternatives

1. Tub Wells/ Dug Wells (not sufficient ground water)
2. Pick Up Weir (diversion). The amount of Irrigation water is not sufficient.
3. Since no/limited Perennial flows are available for Irrigation therefore the conservation of Flood flows through the Construction of Small Dam and to utilized the same for round the year for increasing the agriculture production is only the alternative.

- 4 How many times the Small Dams Organization has held meetings to explain the Project to the people/farmers and other stakeholders in the Project sites? How are the people's opinions on the Project?

		Palai	Kundal	Sanam
1	Number of times of the meetings	18 times	5 times	6 times
2	Total number of participants in the meetings	100	50-60	50-60
3	Number of expected beneficial villages in total	-	-	-
4	Number of expected beneficial farm-households in total	Not yet assessed	Not yet assessed	Not yet assessed
5	Number of representatives of local administration in total	3-4 U.C member of benefited area. One District Coordination Officer of Malakand PATA One Political Agent of Mohmand FATA	One head of U.C. DCO Swabi	Head of Tehsil and Member of Provincial Assembly & DCO Lower Dir.
6	Number of representatives of NGOs in total	-	-	-
7	Number of the others (Please also specify their positions or organizations)	(-)	(-)	(-)
8	Positive opinions	Yes	Yes	Yes
9	Negative opinions	Nil	Nil	Nil
10.	The number of beneficiaries attended the meeting.	100	50-60	50-60

5 Have you received strong complaints or comments on the project from any local residents?

Yes No

If yes, please describe outline of the complaints or comment.

()

6 According to your environmental laws or guideline, is Environmental Impact Assessment (EIA) including Initial Environmental Examination (IEE) required for the project?

Yes No Attached

If yes, please mark corresponding items.

I Required only IEE (Implemented, on going, planning)

Required both IEE and EIA (Implemented, on going, planning)

Required only EIA (Implemented, on going, planning)

Others: (Nil)

7 In the case when EIA steps were taken, was the EIA approved by the relevant laws in the host country? If yes, please mark date of approval and the competent authority.

<input type="checkbox"/> Approved: without a supplementary condition	<input type="checkbox"/> Approved: with a supplementary condition	<input type="checkbox"/> Under appraisal
--	---	--

(Date of approval: Approving authority:)

Not yet started an appraisal process

Others:(IEE is in the preparation stage.)

8 If the project requires a certificate pertaining to the environment and society other than the EIA, please indicate the title of that certificate. No

Already certified

Title of the certificate :()

Not required

Others

As per response at Sr.No 7 above.

9 Please mark any of the items if they are located inside or around the project site.

National park or protected area designated by the government Nil

Ethnic enclave or areas where ethnic, indigenous people or nomads have a traditional lifestyle

Habitat of valuable species protected by domestic laws or international treaties

Virgin forest Nil

Archaeological, historical or cultural valuable monument or area (including cultural heritage)

Ecologically important area Nil

Areas with salt accumulation on a massive scale Nil

Areas with soil erosion on a massive scale Nil

10 Does the project have adverse impacts on the environment and local communities?

Yes No Not identified

Reason:

IEE study is yet to be carried out.

11 Please mark related environmental and social impacts, and describe their outlines.

Air pollution Response will Existing social infrastructures and services

Water pollution be given on The poor, indigenous of ethnic people

Soil pollution completion of IEE. Misdistribution of benefit and damage

Waste Local conflict of interests

Noise and vibration Gender

Ground subsidence Children's rights

Offensive odors Cultural heritage

Geographical features Infectious diseases such as HIV/AIDS etc.

Bottom sediment Others ()

Biota and ecosystem

Water usage

Accidents

Global warming

Involuntary resettlement

Local economy such as employment and livelihood etc.

Land use and utilization of local resources

Social institutions such as social infrastructure and local decision-making institutions

Outline of the impact(s):

As per IEE report:

- 12 Are there any ongoing irrigation or flood control projects in NWFP supported by foreign countries, international organizations or international NGOs.

Yes No

If yes, please describe name of the donor and outline of the project.

- I) Second Flood Protection Sector Project Financed by ADB.
- II) Notional Drainage Programme Finance by World Bank and Asian Development Bank
- III). DERA (Drought Emergency Relief Assistance Programme) ADB and W.B.

Thank you for your cooperation

SALIENT FEATURE OF CHANGHOZ DAM PROJECT **(Annex-I)**
Page-I-3

Location.	-	6 KMs North of Latambar on Bannu Kohat Road.
Estimated Cost.	-	Rs.169.00 (M)
Type of dam.	-	Concrete face Rockfill Dam
Completion period.	-	24 Months.
Height.	-	140 Feet
Length.	-	500 Feet
Top Width.	-	20 Feet
Total storage.	-	12300 Acre Feet
Live storage.	-	11550 Acre Feet
Dead storage.	-	750 Acre Feet
Spillway discharge.	-	47450 cusecs.
C.C.A.	-	3300 Acres
Canal Discharge.	-	28 cusecs.
Life of dam.	-	95 years.
E.I.R.R	-	11.86%.
<u>Progress:-</u>		
	Physical	90 %
	Financial	77 %
Completion	-	June 2005

SALIENT FEATURES OF NARYAB DAM PROJECT

(Annex-I)

Page-2-3

Location	-	26 Km West of Hangu
Estimated Cost.	-	Rs.231.03 (M)
Type of dam.	-	Zoned Earth Fill Dam
Height.	-	105 ft.
Length.	-	4160 ft.
Top width.	-	20 ft.
Total Storage.	-	4400 AF
Live storage.	-	3120 AF
Dead storage.	-	780 AF
Spillway discharge.	-	29350 cusecs
CCA.	-	4163 acres
Canal discharge.	-	20 cusecs
Life of dam.	-	98 years
EIRR.	-	13.35%
B.C.	-	1.47:1
<u>Progress:-</u>		
	Physical	83 %
	Financial	76.52 %
Completion	-	June 2005

SALIENT FEATURES OF SHARKI DAM PROJECT

(Annex-I)

Page-3-3

Location	-	22 KM West of Banda Daud Shah Karak Distt:
Estimated cost.	-	Rs.207.89 (M)
Type.	-	Zoned Earth Fill Dams
Height.	-	130 feet
Length.	-	1660 feet
Top width.	-	30 ft.
Total storage.	-	15744 AF
Dead storage.	-	5748 AF
Live storage.	-	9996 AF
Spillway.	-	78706 cusecs
CCA.	-	2918 Acres
B.C.	-	-1.86:1
I.R.R.	-	17.29%
Discharge of Canal.	-	23.95 cusecs
Life.	-	100 years
<u>Progress:-</u>		
	-	Physical 87 %
	-	Financial 76 %
Completion	-	June 2005

WATER RESOURCE DEVELOPMENT PLAN

Annex-II
Page1-2

- A. Improvement of existing systems
- B. Increasing irrigation application efficiency.
- C. Bring new area under irrigation.
- D. Reclamation of water logged lands
- E. Drought Management.
- F. Flood Control.
- G. Bridging gap between expenditure & income.
- H. Participatory Management.

PRIORITY AREAS OF THE PLAN

Annex-II
Page2-2

- Bring new area under irrigation.
- Remodeling of canals.
- Improvement of Civil/Private Channels.
- To improve management of ground water.
- Harnessing hill torrents by construction of Small Dams.
- Small Irrigation Schemes.
- To devise measures for prevention of Urban and Industrials effluent into canal system.
- Determine the water losses in the canal system and devise measure for its reduction.

Agriculture Extension and Development Plan

The Agriculture Policy is not yet framed, however Agriculture Department has adapted the following Agriculture Policy/Strategy for the development of agriculture.

Salient Feature Of Agriculture Policy

- 1- To reach self sufficiency in food and other crops for the country / Nation.
Through transfer of package of technology received from Research to farmers for increasing per unit production through obtaining maximum benefits from soil and water resources on sustainable basis.
- 2- To improve the living condition of small scale farmers.
By adopting measures to increase the yield per acre through best use of agriculture practices, so that their income is increased.
- 3- To generate an exportable surplus of agricultural production/channel to earn foreign exchange.
Fruits, vegetables and other crops potential production and quality production can make a break through if Export Promotion Bureau cooperates.
- 4- To pursue Agriculture Development on Sustainable basis.
The management of Agriculture bio-diversity and Natural Resources and exploring new areas of development.
5. To obtain potential and quality production of Fruit Vegetables and Crops for exportable surplus.
"Methods Used to implement the Agriculture Policy/Strategy.
 - 1) Improving working condition of staff through pre-service and in-service training.
Pre-service training for preparation and producing well trained personnel in various skills from Agricultural Training Institute & Agricultural University. In-service training to the persons on job is to enhance the skills of the staff so that they can cope with the existing situation prevailing in the field.
 - 2) Communication with Client /Target Group.
The target group includes both male and female farmers. Extension addresses in principle agricultural problems of all categories of farmers, however it deals with small scale farmers in rendering special activities. The transfer of knowledge involves communications at each step. Therefore, it is important for extension agent to know the basics of the communication process. Mass communication media including electronic media such as Radio, Television, Internet, printed media such as newspapers, magazines, posters, leaflets and hand outs etc which may be utilized effectively.

3) Coordination.

Coordination of all the departments linked with Agriculture development such as Agriculture Research, Livestock and Dairy Development, On Farm Water Management, Agriculture Development Banks, Cooperatives, local Kissan councilors, District Kissan Members and other Departments. Non Government Organization's (NGO's) Sarhad Awaran-e-Zarat, Cotton Committee, Tobacco Board, Irrigation and Agriculture Engineering (Farm Machinery Organization). Input supplying agencies e.g. Seed, Fertilizers, Pesticides working on Agriculture must frame a District Coordination Committee under the patronship of District Coordination Officer and Chairmanship of Executive District Officer to run the activities of Agriculture sectors smoothly.

4) Plant Protection.

Plant protection is an important objective/scope to be addressed. In this connection the staff and farmers training be arranged and the legislation already available may be implemented and the Quarantine procedures be adopted by the Federal Government. In order to combat with the adulteration of pesticides the Vigilance Committee for pesticides be made at District level to address the problems timely, it as included in mandate.

5) Preparation of Statistical Data.

Crop reporting services be created so as to provide accurate data regarding.

Crop Estimates area/production of all crops.

Cost of production of various crops.

Consumption of food per capita, per annum.

Future forecasting i.e. at National Level for domestic requirement and surplus for export purpose.

6) Marketing.

Marketing is the main part of mandate to be discussed as it concerned with the production process. The following innovations are to be kept in mind for dealing with as included in mandate

Market Information system (MIS)

Market Research (post harvest losses).

Establishment of regulated market.

Market legislation:

Storage for food, fruit, and vegetables crops etc.

Supply and demand situation.

Rural markets.

Supply of inputs for marketing.

Provision of soft loans.

- 7) **Inputs Supply.**
Facilitating role of extension for all inputs, seed, fertilizers, pesticides, through advice to relevant authorities and private sector on timely supply of inputs and information to the farmers on availability of inputs and gradual disengagement from production and direct supply e.g. Seed multiplication and nurseries.
- 8) **Organizing farmers.**
Working with existing farmers groups and organization and if necessary establishing permanent farmers groups or organization and facilitating input supply and marketing of crop production.
- 9) **Dissemination of Extension messages.**
Development of extension tools, written extension materials (leaflet, booklets, posters, flip charts, video production and programme for Radio and Television, training of farmers, Non Government Organization (NGO's) and dealers, field demonstration and field days observation.
- 10) **Quality Control of Inputs.**
Registration of dealers for chemical inputs (Pesticides and Fertilizers) registration of growers for seed production and nurseries, physical check up of chemical, seed, fertilizer and nurseries.
- 11) **Establishment of Rural Support and Farm Services Centres.**
Address the farmer's current production constraints in the area of extension services, planning and input supply. Facilitate a shift to participatory approach i.e. working together with the farmers in the target area and in cooperation with relevant research institutions, develop and provide technology package.
Mobilize extension service within the target area as effective support system for Farm Services Centres and making available farm machinery on easy rates to the farmers.
Besides this training on the job, touring and other inputs to the research centers, organization and areas of interest to enhance their knowledge and skill for adoption and improvement in their overall farm produce, income and better living condition.
- 12) **Feed back.**
Feed back is the real position which is the most important while conducting processes etc. It can be assessed through periodic meeting, individual contact, reporting system etc, etc.
- 13) **Monitoring & Evaluation.**
Though there is no direct evaluation of the extension impact, however the funds provided are financially and physically evaluated through quarterly review. Besides the impact is judged from crop yields, food production and cash returns to the farmers & overall improvement in their life / living.

Present Agriculture Extension System and Activities

1. Palai Charsadda District:-

In the District the Following Developmental Project are Working for the uplift of the farming communities.

1. Farm services centers.
2. I.P.M of Fruit Fly.
3. Farmers Field School (Post FFS , PHP)

2. Kundal Swabi District:-

In the District the Following Developmental Project are Working for the uplift of the farming communities.

1. Farm services centers.
2. I.P.M of Termites.
3. Farmers Field School (Post FFS , PHP)

3. Sanam Lower Dir District:-

In the District the Following Developmental Project are Working for the uplift of the farming communities.

1. Farm services centers.
1. Dir Area Development Project.
2. Farmers Field School (Post FFS , PHP)

Project Planned for the Districts

1. Palal Charsadda District:-

In the District the Following Developmental Project are planned for the uplift of the farming communities.

1. Strengthening of FSC and FFS Establishment.
2. Construction of community storages.

2. Kundal Swabi District:-

In the District the Following Developmental Project are Planned for the uplift of the farming communities.

1. Strengthening of FSC and FFS Establishment.
2. Construction of community storages.
3. Establishment of Model Villages

3. Sanam Lower Dir District:-

In the District the Following Developmental Project are planned for the uplift of the farming communities.

1. Strengthening of FSC and FFS Establishment.
2. Construction of community storages
3. Establishment of Model Villages

3. Show an integrated project implementation schedule for each Project site (break-down the works mentioned in 2. (1) into several stages and arrange the stages sequentially in a monthly schedule chart).

(An image of the chart)

For all the Three Dams

ANNEX-IV

Works (Name of Dam)	Stage	Months																																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		
1	EIA Survey	↔																																			
2	Land acquisition/ re-settlement				↔																																
3	Feasibility study	↔																																			
4	Basic Design				↔																																
5	Dam Construction																																				
6	Irrigation Main Canal Construction																																				
7	Form Land reclamation																																				
8	Organization water users (WUA)																																				
9	Water courses construction																																				
10	Agriculture extension/farm support continues actively																																				

**BILL OF QUANTITIES FOR DRILLING WORKS AND LABORATORY TESTING OF
DARABAN ZAM DAM, CHODHWAN ZAM DAM AND SHEIKH HAIDER ZAM DAM**

Item No.	Description	Unit	Quantities	Unit Rate (Rupees)	Amount (Rupees)
1.	2.	3.	4.	5.	6.
1.	Mobilization & Demobilization including shifting from bore hole to bore hole and preparing approach to the holes.	L/sum		180000/	180000
2.	Setting up of hole.	Each	30	200/	6000
3.	Drill hole on land.	Each	30	300/	9000
4.	Core drilling in vertical holes through all materials at depth:				
a.	0 - 50 ft.	Feet	300	1250/	375000
b.	51 - 100 ft.	Feet	150	1250/	187500
c.	101 - 150 ft.	Feet	150	1250/	187500
d.	151 and above.	Feet	60	1250/	75000
5.	Core drilling in angled holes through all materials:				
a.	0 - 50 ft.	Feet	300	1250/	375000
b.	51 - 100 ft.	Feet	150	1250/	187500
c.	101 - 150 ft.	Feet	150	1250/	187500
d.	151 and above.	Feet	60	1250/	75000
6.	Extra over in rates For items 4 and 5 for drilling With bentonite mud as drilling fluid.	Feet	1020	180/	183600
7.	Taking core samples, preservation, labeling, packing, storage and transportation of rock core samples to Testing Lab. CMTL, WAPDA, Lahore	No.	30	205/	6150
8.	Boring in all materials:				
a.	0 - 50 ft.	Feet	150	800/	120000
b.	51 - 100 ft.	Feet	150	800/	120000
c.	101 and above.	Feet	150	800/	120000

Contd...

Annex - V
2-4

Item No.	Description	Unit	Quantities	Unit Rate (Rupees)	Amount (Rupees)
1.	2.	3.	4.	5.	6.
9.	Taking undisturbed sample, including their labeling, packing, storage and transportation to Testing Lab. CMTL, WAPDA, Lahore:				
a.	Pitcher Sampler	No.	15	200 /	3000
b.	Demison Sampler	No.	15	250 /	3750
c.	Shelby tube.	No.	15	350 /	5250
10.	Taking disturbed sample	No.	30	450 /	13500
11.	Taking water sample, including labeling, packing, storage and transportation of samples to Testing Lab. CMTL, WAPDA, Lahore	No.	15	450 /	6375
12.	Providing one inch dia PVC pipe for Piezometers.	Feet	1500	25 /	37500
13.	Performing Standard Penetration test (SPT) in bore holes alongwith collection of SPT samples at 3.5 feet interval or as directed by Consultants including labeling, packing, storage and transportation of samples to Testing Lab. CMTL, WAPDA, Lahore	No.	30	500 /	15000
14.	Performing field permeability tests in holes:	Each	30	450 /	13500
a)	Constant head permeability test	Each	15	1800 /	27000
b)	Falling head permeability test	Each	15	1800 /	27000
15.	Performing packer tests of:				
a)	1½ hours duration	Each	15	4000 /	60000
b)	Longer than 1½ hours duration	Each	15	4000 /	60000
16.	Installation of Identification Pillars at holes.	No.	30	250 /	7500

279375/-

Annex - V
3-4

Item No.	Description	Unit	Quantities	Unit Rate (Rupees)	Amount (Rupees)
1.	2.	3.	4.	5.	6.

17.	Excavation of test pits 6 ft. x 6 ft. upto maximum 15 feet deep below ground level or upto bed rock/ groundwater, including backfilling of pits to original ground condition.	Feet	30	1000	30000
18.	Collection of undisturbed block samples from test pits including their labeling, packing, storage and transportation to Testing Lab. CMTL, WAPDA, Lahore	Each.	30	500/	15000
19.	Collection of composite bulk samples from test pits including their labeling, packing, storage and transportation to Testing Lab. CMTL, WAPDA, Lahore	Each	30	500/	15000
20.	Excavation of trenches 2 to 3 feet/ upto bed rock and 10 feet long including backfilling of the trenches to original ground condition.	Each	45	300/	13500
21.	Collection of disturbed samples from trenches including their labeling, packing, storage and transportation to Testing Lab. CMTL, WAPDA, Lahore.	Each	30	300/	9000
22.	Geo-physical survey.	Feet	3000	10/	30000
23.	Providing photographs of core and core boxes.	L/sum		15000/	15000
24.	Providing 5 copies of the Site Investigation Report	L/sum		20000/	20000

Total

Rs.

2821625

678

LIST OF LABORATORY TESTSDARABAN ZAM DAM, CHODI IWAN ZAM DAM AND SHEIKH HAIDER ZAM DAM

The following tests are to be carried out in the Laboratory:

S.#	Description	No.	Unit Rate	Amount (Rs.)
A-	INDEX TESTS			
1.	Gradation analysis of coarse material	15	ON THE BASIS OF PL'S DVE	
2.	Particle size Distribution with Hydrometer	15		
3.	Atterberg Limits	15		
4.	Specific gravity	15		
5.	Point load	15		
B-	ENGINEERING TESTS			
6.	Unconfined compressive strength	15	WILL BE MADE ON THE BASIS OF PL'S DVE	
7.	Consolidation	15		
8.	Moisture Content	15		
9.	Field Density:			
	i. By sand replacement method	6		
	ii. By water replacement method	6		
10.	Maximum and Minimum Density	6		
11.	Standard Procter	15		
12.	Shear box	15		
13.	Modulus of Elasticity	15		
14.	Poisson's ratio	15		
15.	Soundness of aggregates	15		
16.	Loss Angeles Abrasion	12		
17.	Lab. Permeability	6		
18.	Thin section study (Petrographic Analysis)	9		
19.	Triaxial compression	6		
20.	Pin hole dispersion	15		
C-	CHEMICAL TESTS			
21.	TDS (Soil & water) Total Dissolved Salts	15	CANNOT BE MADE ON THE BASIS OF PL'S DVE	
22.	Sulphate content (Soil & Water)	15		
23.	Chloride content (Soil & Water)	15		
24.	Organic matter content (Soil & Water)	15		

No.	Version: A	Date 10 Sep 2003	Page 6 of 18
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Form 1: Project Description

File No.
Date

(To be filled by EPA)

General Information

1. Project Name or Title:- Construction of Kundal Dam Project Distt: Swabi NWFP.
2. Project Proponent (Department or Organization):- Small Dams Organization, Irrigation & Power Department, N.W.F.P.
3. Address:- Defence Officer Colony, Street #08 House #134 Peshawar.
4. Telephone:- +92-091-272384
5. Fax:- +92-091-272384
6. E-Mail _____
7. Representative of the Proponent:- Director General, Small Dams Organization Peshawar.
8. Designation:- Director General
9. Name of the person who conducted this assessment:- Engineer Nawab Ali
10. Designation:- Deputy Director Small Dams Organization .
11. Qualification:- Bsc. Civil Engineer

Project Information

12. Project location:- District Swabi NWFP.
13. Cost of the project:- 189.42 Million
14. Purpose of the reservoir:- To provide irrigation facilities to Barani Land.
15. Name of the river or stream:- Badga Khawar.
16. Is the stream seasonal or perennial :- Having less perennial flows, greater portion of storms will be stored.
17. Total area of the reservoir:- 1199924 M²
18. Total storage capacity:- 20499839 M³
19. Total volume of the embankment:- 661100 M³
20. Brief Project Description:- It will irrigate an area of 3000 acres with cropping intensity of 220%, having EIRR as 24.28%. The length of dam is 1148 Ft with a total height of 157.5 FT. The life of dam is 100 Years.

Please attach a map of the proposed project site showing the location of the Key structure, access, etc.

No.	Version: A	Date 10 Sep 2003	Page 7 of 18
-----	------------	------------------	--------------

21. Quantity of construction material (concrete, gravel, clay etc) required and their source:

- a. Cement – 3000 tons – Locally available in Market.
b. Sand – 177000 CUFT – Locally available.
c. Aggregate – 35400 CUFT Locally available
d. Steel – 500 Tonne – Locally available in Market.

Construction

22. Who owns the proposed land for the project? Locals
23. What is the present use of the land? Being barren land, no use.
24. Are there any structures in the proposed site now? Yes No
25. If yes, will any structure be demolished? Yes No
26. If yes, where the demolit on waste will be disposed?:-

27. Are there any trees on the proposed site? Yes No
28. Will any tree be removed? Yes No
 If yes, how many?

29. Period of construction (start and end dates) 24 Months
30. What major construction equipment
(dozer, grader, crane etc.) will be used? Dozzer, Excavator, Dump trucks etc;
31. Will any land be acquire?:- Yes.
 If yes, please specify
 The total area :- 327 acres.
 Present ownership of land: Locals.
 What is the present use of the land? No appreciable use.
 How the land will be acquired? Through District Government
 How the price will be determined? Through District Government staff/procedure
 How much compensation will be paid? Provisionally a sum of Rs. 5(M) kept in estimate.
 When the compensation will be paid? After award
32. In case of state land are there any encroachers on the land?
 If yes, please specify.
 The total area :- _____ NA
 Number of Encroachers :- _____ NA
 Number and types of structures :- _____ NA
 Will any compensation be paid? :- _____ NA
 If yes for what assets? :- _____ NA

No.	Version: A	Date 10 Sep 2003	Page 8 of 18
-----	------------	------------------	--------------

How much compensation will be paid? _____ *NA* _____

How the compensation rate will be determined? _____ *NA* _____

When the compensation will be paid? _____ *NA* _____

Please attach any inventory of all affected persons, their assets, and the compensation.

No.	Version: A	Date 10 Sep 2003	Page 9 of 18
-----	------------	------------------	--------------

Form II: Screening

Is the proposed project or part of the project in an ecologically sensitive area?

- Yes
 No.

Is the total storage capacity more than five million cubic meter?

- Yes
 No

Is the total area of the reservoir more than one square kilometer?

- Yes
 No

If the answer to any of the above questions is yes then the project would require an initial environmental examination or an environment impact assessment.

Refer to the Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environment Impact Assessment Regulations 2000 for appropriate category.

No.	Version: A	Date 10 Sep 2003	Page 10 of 18
-----	------------	------------------	---------------

Form III : Environmental Profile

1. Describe the terrain of the project area
- Flat or level (Slope < 3%)
 - Level to moderately steep (Slope 3% -30%)
 - Moderately steep to mountainous (Slope > 30%)

2. Are there signs of soil erosion or landslide anywhere within 500 m of the proposed site?
- Yes
 - No.

If yes please describe (where, nature):

3. Please describe the hydrological conditions of the stream or river run-off characteristics, rainfall, rainfall variability, ground water and drought patterns.

Hydrological Studies of the Project is attached

Please attach the hydrological study of the project.

4. Is the stream polluted? Is domestic or other wastewater discharge to it? No

5. What are the present uses of the stream eg; agriculture, domestic, industrial washing fishery? No use

6. Is there any groundwater well on the proposed site or within 500 m of the proposed site?

- Yes
- No

If yes describe each well

Type (Dug well, tube well, hand pump) and Energy Source (Electricity, diesel engine animal driven manual)	Location (Village road mohalla etc and distance from the site)	Depth and yield	Uses (Drinking agriculture domestic, industrial, washing livestock)

7. Based on the interview of the surrounding population or a wildlife expert is any form of wildlife found on, or around the proposed site of the project?

Yes

No

If yes please describe _____

8. Are there any existing trees or vegetation on the proposed site?

Yes

No

If yes please how many? _____

9. Are there any reservoir forest or protected area within 1,000 m of the proposed site?

Yes

No

If yes please describe? _____

No.	Version: A	Date 10 Sep 2003	Page 12 of 18
-----	------------	------------------	---------------

10. What is the present land use of the proposed dam site and its vicinity (roughly a radius of 500 m) of the proposed site?

	Residential (Thick Moderate, Sparse)	Commercial (Office Shops, Fuel Stations)	Open Land (Parks Farmlands, un-utilized plots, barren land)	Sensitive Receptors and sites of Cultural Importance	Other
Approximate cover %			100%		
Description			Un-Utilized		

(Please attach a map of the proposed project site and indicate roughly the area that you have not considered for this evaluation)

11. For any agriculture farmland on the proposed site and radius of 500m around it provide the following information.

Kharif crop(s) and average yield _____
 Rabi crop(s) and average yield _____
 Source of irrigation water _____
 Area affected by salinity or water logging _____

12. Please describe all the sensitive receptors within 500m of the proposed site

Type (schools, colleges, hospitals and clinics)	Name	Size (Number of students or number of beds)	Location (Village road mohalla etc)	Distance from site

13. What is the total population of the area: 20,000

14. What proportion of the houses in the area are pukka, semi-pukka and kutchra?

1:2:1

15. How are the general hygienic conditions of the project area.

Generally clean

No.	Version: A	Date 10 Sep 2003	Page 13 of 18
-----	------------	------------------	---------------

- Fair
- Poor

16. Is there any bad odor in the project area? Yes No

What is the source of Odor:- _____

17. What are the main sources of income of the surrounding community?
Rain fall farming and labouring in the developed areas.

18. Is there any site of cultural importance (graveyard, shrine, mosque archeological site) within 1,000 m of the proposed scheme?
 Yes No.

If yes, please describe? _____

19. Will the reservoir submerge any:
- Village or house 10 No houses
 - Wetland:- _____
 - Forest :- _____
 - Sensitive vegetation :- _____
 - Wildlife habitat :- _____
 - Tomb or grave yard :- _____
 - Archeologically important site :- _____

No.	Version: A	Date 10 Sep 2003	Page 16 of 18
-----	------------	------------------	---------------

Social Assessment

Socio –economic and livelihood impacts.

1. What are the existing social livelihood system and common property resource management system of the communities?

Rain fed farming and labouring in the other towns.

2. Access to government facilities for health and education and to drinking water?

All most all the basic facilities like Schools, BHU etc exists in the area and after development of the area these facilities will be improved.

3. What are the pattern of existing conflicts and existing mechanism of conflict resolution for areas under cultivation and grazing lands? Are there any potential conflicts between and down stream communities?

NA

4. What are the benefits perceived by communities of dam (please consult men and women separately):-

Socio-economic conditions and standard of life will be improved.

5. What role local institutions and communities will have in management and operation of the dam

NA

6. Assessment of the potential conflicts between lower and upper riparian communities if any (history of conflicts in the area, claims on lands, disputes etc)

NA

7. How was the process of consultation carried out, conducted and documented with communities above and below the proposed dam site?

On the greater public demand and viability of the project the construction of small dams is proposed.

No.	Version: A	Date 10 Sep 2003	Page 17 of 18
-----	------------	------------------	---------------

8. Cultural and religious sites of community significance in the area to be submerged:-

_____ NA _____

General Analysis and impacts

9. What level of consultation with men and women for the project was carried out?

_____ *Not required* _____

10. What is the target (both direct and indirect) of the proposed project? Who will benefit? Who will lose?

The communities in the project area are the target. Both direct and indirect benefits will be provided. No one will lose.

11. How marginalized communities benefit by this project?

Due to the development of the area marginalized communities will also benefit from this project.

12. Cultural social and religious constrains to community participation (men and women) if nay

_____ (NA) _____

WATER RESERVOIR TN ARID ZONES

No	Version A	Date 10 Sep 2003	Page 14 of 18
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Form IV: Impact Assessment

Potential Negative Environment Impacts.	Tick if relevant	Mitigation Measures	Tick if proposed	Monitoring Plan
Socioeconomic Impact	<input type="checkbox"/>	To the extent possible local labor will be used for unskilled semi skilled and skilled jobs.	<input type="checkbox"/>	
Water related diseases	<input type="checkbox"/>	A formal resettlement plan will be prepared Sanitation and health care programs will be initiated for the population around the reservoir.	<input type="checkbox"/>	
Wildlife and vegetation	<input type="checkbox"/>	As far as possible the reservoir water level will be fluctuated to discourage growth of disease carrying insects. Minimum flow required to maintain vegetation will be determined and it will be ensured that the flow is maintained. Operational rules will be defined for regulating downstream flows at critical times to protect habitat for reproduction or migratory routes.	<input type="checkbox"/>	
Safety Concerns	<input type="checkbox"/>	Provision for the migration of fish and other aquatic organisms will be provided if needed. The surroundings communities will be informed about the construction schedule and will be briefed about the safety procedures.	<input type="checkbox"/>	

WATER RESERVOIR IN ARID ZONES

Potential Negative Environment Impacts.	Tick if relevant	Mitigation Measures	Tick if proposed	Monitoring Plan
	<input type="checkbox"/>	<p>A comprehensive plan for operation maintenance and rehabilitation will be prepared.</p> <p>This should include inspections, evaluations, modifications and upgrades of the dams to ensure that they meet safety standards.</p> <p>Emergency action plans will be prepared training will be provided to dam operators.</p> <p>A periodic and thorough review of the rainfall and runoff characteristics as well as the identification of other changes in the hydrology of the basin will be undertaken to monitor the changes in the hydrology characteristics of the stream basin.</p>	<input type="checkbox"/>	
Risk of erosion and landslide	<input type="checkbox"/>	Stabilization measures will be undertaken.	<input type="checkbox"/>	
Construction	<input type="checkbox"/>	Construction waste (excess rock and soil, demolition waste, etc) will be disposed at <u>appropriate</u> (location)	<input type="checkbox"/>	
		All properties utility lines and other structures damaged during the construction will be restored.	<input type="checkbox"/>	

Form 1: Project Description

File No. _____ (To be filled by EPA)

Date _____

General Information

1. Project Name or Title:- Construction of Sanam Dam Project Distt: Lower Dir NWFP.
2. Project Proponent (Department or Organization):- Small Dams Organization, Irrigation & Power Department, N.W.F.P.
3. Address:- Defence Officer Colony, Street #08 House #134 Peshawar.
4. Telephone:- +92-091-272384
5. Fax:- +92-091-272384
6. E-Mail _____
7. Representative of the Proponent:- Director General, Small Dams Organization Peshawar.
8. Designation:- Director General
9. Name of the person who conducted this assessment:- Engineer Nawab Ali
10. Designation:- Deputy Director Small Dams Organization.
11. Qualification:- Bsc. Civil Engineer

Project Information

12. Project location:- District Lower Dir NWFP.
13. Cost of the project:- 94.255 (M) Dev for poverty alleviation by Agriculture
14. Purpose of the reservoir:- To provide irrigation facilities to rain fed area.
15. Name of the river or stream:- Asbant Nullah .
16. Is the stream seasonal or perennial :- The stream carries perennial flow to the extent to one cusec but subject to floods during rainy season.
17. Total area of the reservoir:- 137643 M²
18. Total storage capacity:- 1799659 M³
19. Total volume of the embankment:- 147047 M³
20. Brief Project Description:- The acres with cropping intensity of 220%, having EIRR as 24.28%. The length of dam is 1148 Ft with a total height of 157.5 FT. The life of dam is 100 Years.

Please attach a map of the proposed project site showing the location of the Key structure, access, etc.

No.	Version: A	Date to Sep 2003	Page 7 of 18
-----	------------	------------------	--------------

21. Quantity of construction material (concrete, gravel, clay etc) required and their source:

- a. Cement – 3000 tons – Locally available in Market.
- b. Sand – 177000 CUFT – Locally available.
- c. Aggregate – 35400 CUFT Locally available
- d. Steel – 500 Tonne – Locally available in Market.

Construction

22. Who owns the proposed land for the project?

Locals

23. What is the present use of the land ?

Being barren land, no use.

24. Are there any structures in the proposed site now?

Yes No.

25. if yes, will any structure be demolished?

Yes No

26. If yes, where the demolit on waste will be disposed?:-

27. Are there any trees on the proposed site?

Yes No

28. Will any tree be removed?

Yes No

If yes, how many?

29. Period of construction (start and end dates)

24 Months

30. What major construction equipment

(dozer, grader, crane etc.) will be used?

Dozzer, Excavator, Dump trucks etc;

31. Will any land be acquire?:-

Yes.

If yes, please specify

The total area :-

327 acres.

Present ownership of land:

Locals.

What is the present use of the land?

No appreciable use.

How the land will be acquired?

Through District Government

How the price will be determined ?

Through District Government staff/procedure

How much compensation will be paid?

Provisionally a sum of Rs. 5(M) kept in estimate.

When the compensation will be paid?

After award

32. In case of state land are there any encroachers on the land ?

If yes, please specify.

The total area :-

Number of Encroachers :-

Number and types of structures :-

Will any compensation be paid? :-

If yes for what assets? :-

WATER RESERVOIR AND AID ZONES

No.	Version: A	Date to Sep 2003	Page 8 of 18
-----	------------	------------------	--------------

How much compensation will be paid? _____

How the compensation rate will be determined? _____

When the compensation will be paid? _____

Please attach any inventory of all affected persons, their assets, and the compensation.

FORM III. ENVIRONMENTAL PROFILE

1. Describe the terrain of the project area
- Flat or level (Slope < 3%)
 - Level to moderately steep (Slope 3% -30%)
 - Moderately steep to mountainous (Slope > 30%)
2. Are there signs of soil erosion or landslide anywhere within 500 m of the proposed site?
- Yes
 - No.

If yes please describe (where, nature):

3. Please describe the hydrological conditions of the stream or river run-off characteristics, rainfall, rainfall variability, ground water and drought patterns.

Please attach the hydrological study of the project.

4. Is the stream polluted? Is domestic or other wastewater discharge to it? No
5. What are the present uses of the stream eg; agriculture, domestic, industrial washing fishery? No use
6. Is there any groundwater well on the proposed site or within 500 m of the proposed site?

- Yes
- No

If yes describe each well

Type (Dug well, tube well, hand pump) and Energy Source (Electricity, diesel engine animal driven manual)	Location (Village road mohalla etc and distance from the site)	Depth and yield	Uses (Drinking agriculture domestic, industrial, washing livestock)

7. Based on the interview of the surrounding population or a wildlife expert is any form of wildlife found on, or around the proposed site of the project?

- Yes
 No

If yes please describe _____

8. Are there any existing trees or vegetation on the proposed site?

- Yes
 No

If yes please how many? _____

9. Are there any reservoir forest or protected area within 1,000 m of the proposed site?

- Yes
 No

If yes please describe? _____

WATER RESERVOIR AND AID ZONES

10. What is the present land use of the proposed dam site and its vicinity (roughly a radius of 500 m) of the proposed site?

	Residential (Thick Moderate, Sparse)	Commercial (Office Shops, Fuel Stations)	Open Land (Parks Farmlands, un-utilized plots, barren land)	Sensitive Receptors and sites of Cultural Importance	Other
Approximate cover %			100%		
Description			Un-Utilized		

(Please attach a map of the proposed project site and indicate roughly the area that you have not considered for this evaluation)

11. For any agriculture farmland on the proposed site and radius of 500m around it provide the following information.

Kharif crop(s) and average yield _____
 Rabi crop(s) and average yield _____
 Source of irrigation water _____
 Area affected by salinity or water logging _____

12. Please describe all the sensitive receptors within 500m of the proposed site

Type (schools, colleges, hospitals and clinics)	Name	Size (Number of students or number of beds)	Location (Village road mohalla etc)	Distance from site

13. What is the total population of the area > 20,000

14. What proportion of the houses in the area are pukka, semi-pukka and kutcha? 1:2:1

15. How are the general hygienic conditions of the project area.

Generally clean

Fair

Poor

16. Is there any bad odor in the project area? Yes

No

What is the source of Odor:- _____

17. What are the main sources of income of the surrounding community?

Rain fall farming and labouring in the developed areas.

18. Is there any site of cultural importance (graveyard, shrine, mosque archeological site) within 1,000 m of the proposed scheme?

Yes

No.

If yes, please describe?

19. Will the reservoir submerge any: _____

Village or house 10 No houses

Wetland:- _____

Forest :- _____

Sensitive vegetation :- _____

Wildlife habitat :- _____

Tomb or grave yard :- _____

Archeologically important site :- _____

No.	Version: A	Date to Sep 2003	Page 13 of 18
-----	------------	------------------	---------------

Social Assessment**Socio-economic and livelihood impacts.**

1. What are the existing social livelihood system and common property resource management system of the communities?
Rain fed farming and labouring in the other towns.
2. Access to government facilities for health and education and to drinking water All most all the basic facilities like Schools, BHU etc exists in the area and after development of the area these facilities will be improved.
3. What are the pattern of existing conflicts and existing mechanism of conflict resolution for areas under cultivation and grazing lands? Are there any potential conflicts between and down stream communities?
NA
4. What are the benefits perceived by communities of dam (please consult men and women separately):- socio-economic conditions and standard of life will be improved.
5. What role local institutions and communities will have in management and operation of the dam
NA
6. Assessment of the potential conflicts between lower and upper riparian communities if any (history of conflicts in the area, claims on lands, disputes etc)
NA
7. How was the process of consultation carried out, conducted and documented with communities above and below the proposed dam site?
On the greater public demand and viability of the project the construction of small dams is proposed.

No.	Version: A	Date to Sep 2003	Page 14 of 18
-----	------------	------------------	---------------

8. Cultural and religious sites of community significance in the area to be submerged:-
NA

General Analysis and impacts

9. What level of consultation with men and women for the project was carried out?
Not required
10. What is the target (both direct and indirect) of the proposed project? Who will benefit? Who will lose? The communities in the project area is the target. Both direct and indirect benefits will be provided. No one will lose.
11. How marginalized communities benefit by this project? Due to the development of the area marginalized communities will also benefit from this project.
12. Cultural social and religious constrains to community participation (men and women) if nay
NA)

WATER RESERVOIR IN ARID ZONES

No	Version A	Date 10 Sep 2003	Page 14 of 18
----	-----------	------------------	---------------

Form IV: Impact Assessment

	Tick if relevant		Tick if proposed	
Potential Negative Environment Impacts.		Mitigation Measures		Monitoring Plan
Socioeconomic Impact	<input type="checkbox"/>	To the extent possible local labor will be used for unskilled semi skilled and skilled jobs.	<input type="checkbox"/>	
Water related diseases	<input type="checkbox"/>	A formal resettlement plan will be prepared Sanitation and health care programs will be initiated for the population around the reservoir.	<input type="checkbox"/>	
Wildlife and vegetation	<input type="checkbox"/>	As far as possible the reservoir water level will be fluctuated to discourage growth of disease carrying insects. Minimum flow required to maintain vegetation will be determined and it will be ensured that the flow is maintained. Operational rules will be defined for regulating downstream flows at critical times to protect habitat for reproduction or migratory routes.	<input type="checkbox"/>	
Safety Concerns	<input type="checkbox"/>	Provision for the migration of fish and other aquatic organisms will be provided if needed. The surroundings communities will be informed about the construction schedule and will be briefed about the safety procedures.	<input type="checkbox"/>	

WATER RESERVOIR IN ARID ZONES

Potential Negative Environment Impacts.	Tick if relevant	Mitigation Measures	Tick if proposed	Monitoring Plan
	<input type="checkbox"/>	<p>A comprehensive plan for operation maintenance and rehabilitation will be prepared.</p> <p>This should include inspections, evaluations, modifications and upgrades of the dams to ensure that they meet safety standards.</p> <p>Emergency action plans will be prepared training will be provided to dam operators.</p> <p>A periodic and thorough review of the rainfall and runoff characteristics as well as the identification of other changes in the hydrology of the basin will be undertaken to monitor the changes in the hydrology characteristics of the stream basin.</p>	<input type="checkbox"/>	
Risk of erosion and landslide	<input type="checkbox"/>	Stabilization measures will be undertaken.	<input type="checkbox"/>	
Construction	<input type="checkbox"/>	Construction waste (excess rock and soil, demolition waste, etc) will be disposed at <u>appropriate</u> (location)	<input type="checkbox"/>	
		All properties utility lines and other structures damaged during the construction will be restored.	<input type="checkbox"/>	

Form 1: Project Description

File No. _____ (To be filled by EPA)
Date _____

General Information

1. Project Name or Title:- Construction of Palai Dam Distt: Chaarsadda NWFP.
2. Project Proponent (Department or Organization):- Small Dams Organization, Irrigation & Power Department, N.W.F.P.
3. Address:- Defence Officer Colony, Street #08 House #134 Peshawar.
4. Telephone:- +92-091-272384
5. Fax:- +92-091-272384
6. E-Mail _____
7. Representative of the Proponent:- Director General, Small Dams Organization Peshawar.
8. Designation:- Director General
9. Name of the person who conducted this assessment:- Engineer Nawab Ali
10. Designation:- Deputy Director Small Dams Organization .
11. Qualification:- Bsc. Civil Engineer

Project Information

12. Project location:- District Charsadda, NWFP.
13. Cost of the project:- Rs. 197.97 Million
14. Purpose of the reservoir:- To provide irrigation facilities to barani area.
15. Name of the river or stream:- Jindi Nullah.
16. Is the stream seasonal or perennial :- Having a very less perennial flows, but greater part will be from storms during rainy season.
17. Total area of the reservoir:- 467289 M²
18. Total storage capacity:- 5427300 M³
19. Total volume of the embankment:- 413552 M³
20. Brief Project Description:- The project will provide irrigation water to an area of 4600 acres with cropping intensity of 130%. The EIRR is 14.42 % and having B/C ratio 1.67:1. The length of dam is 1230 Ft with a total height of 104 Ft. It type of dam is concrete faced rock-fill dam.

Please attach a map of the proposed project site showing the location of the Key structure, access, etc.

No.	Version: A	Date 10 Sep 2003	Page 7 of 18
-----	------------	------------------	--------------

21. Quantity of construction material (concrete, gravel, clay etc) required and their source:

- a. Cement – 3500 tons – Locally available in Market.
- b. Sand – 5900 CUYD – Locally available.
- c. Aggregate – 11800 CUYD Locally available
- d. Steel – 551 Tonne – Locally available in Market.

Construction

22. Who owns the proposed land for the project?

Locals

23. What is the present use of the land ?

No appreciable use.

24. Are there any structures in the proposed site now?

Yes No.

25. If yes, will any structure be demolished?

Yes No

26. If yes, where the demolit on waste will be disposed?:-

27. Are there any trees on the proposed site?

Yes No

28. Will any tree be removed?

Yes No

If yes, how many?

29. Period of construction (start and end dates)

24 Months

30. What major construction equipment

(dozer, grader, crane etc.) will be used?

Dozzer, Excavator, Dump trucks etc;

31. Will any land be acquire?:-

Yes.

If yes, please specify

The total area :-

300 acres.

Present ownership of land:

Locals.

What is the present use of the land?

No use being barran land.

How the land will be acquired?

Through District Government

How the price will be determined ?

Through District Government staff/procedure

How much compensation will be paid?

Provisionally a sum of Rs. 4.5 (M). kept in estimate.

When the compensation will be paid?

After award

32. In case of state land are there any encroachers on the land ?

If yes, please specify.

The total area :-

_____ NA _____

Number of Encroachers :-

_____ NA _____

Number and types of structures :-

_____ NA _____

Will any compensation be paid? :-

_____ NA _____

If yes for what assets? :-

_____ NA _____

No.	Version: A	Date 10 Sep 2003	Page 8 of 18
-----	------------	------------------	--------------

How much compensation will be paid? _____ NA _____

How the compensation rate will be determined? _____ NA _____

When the compensation will be paid? _____ NA _____

Please attach any inventory of all affected persons, their assets, and the compensation.

No.	Version: A	Date 10 Sep 2003	Page 9 of 18
-----	------------	------------------	--------------

Form II: Screening

Is the proposed project or part of the project in an ecologically sensitive area?

- Yes
 No.

Is the total storage capacity more than five million cubic meter?

- Yes
 No

Is the total area of the reservoir more than one square kilometer?

- Yes
 No

If the answer to any of the above questions is yes then the project would require an initial environmental examination or an environment impact assessment.

Refer to the Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environment Impact Assessment Regulations 2000 for appropriate category.

No.	Version: A	Date 10 Sep 2003	Page 10 of 18
-----	------------	------------------	---------------

Form III : Environmental Profile

1. Describe the terrain of the project area
- Flat or level (Slope < 3%)
 - Level to moderately steep (Slope 3% -30%)
 - Moderately steep to mountainous (Slope > 30%)

2. Are there signs of soil erosion or landslide anywhere within 500 m of the proposed site?
- Yes
 - No.

If yes please describe (where, nature):

3. Please describe the hydrological conditions of the stream or river run-off characteristics, rainfall, rainfall variability, ground water and drought patterns.

Hydrological Studies of the Project is attached

Please attach the hydrological study of the project.

4. Is the stream polluted? Is domestic or other wastewater discharge to it? No

5. What are the present uses of the stream eg; agriculture, domestic, industrial washing fishery?

Non upto the dam site.

6. Is there any groundwater well on the proposed site or within 500 m of the proposed site?

Yes

No

No.	Version: A	Date 10 Sep 2003	Page 11 of 18
-----	------------	------------------	---------------

If yes describe each well

Type (Dug well, tube well, hand pump) and Energy Source (Electricity, diesel engine animal driven manual)	Location (Village road mohalla etc and distance from the site)	Depth and yield	Uses (Drinking agriculture domestic, industrial, washing livestock)

7. Based on the interview of the surrounding population or a wildlife expert is any form of wildlife found on, or around the proposed site of the project?

Yes

No

If yes please describe _____

8. Are there any existing trees or vegetation on the proposed site?

Yes

No

If yes please how many? _____

9. Are there any reservoir forest or protected area within 1,000 m of the proposed site?

Yes

No

If yes please describe? _____

No.	Version: A	Date 10 Sep 2003	Page 12 of 18
-----	------------	------------------	---------------

10. What is the present land use of the proposed dam site and its vicinity (roughly a radius of 500 m) of the proposed site?

	Residential (Thick Moderate, Sparse)	Commercial (Office Shops, Fuel Stations)	Open Land (Parks Farmlands, un-utilized plots, barren land)	Sensitive Receptors and sites of Cultural Importance	Other
Approximate cover %			100%		
Description			<i>Un-Utilized, un-developed hilly area.</i>		

(Please attach a map of the proposed project site and indicate roughly the area that you have not considered for this evaluation)

11. For any agriculture farmland on the proposed site and radius of 500m around it provide the following information.

Kharif crop(s) and average yield _____
 Rabi crop(s) and average yield _____
 Source of irrigation water _____
 Area affected by salinity or water logging _____

12. Please describe all the sensitive receptors within 500m of the proposed site

Type (schools, colleges, hospitals and clinics)	Name	Size (Number of students or number of beds)	Location (Village road mohalla etc)	Distance from site

13. What is the total population of the area: 3500 approx.

14. What proportion of the houses in the area are pukka, semi-pukka and kutcha?

1:3:1

15. How are the general hygienic conditions of the project area.

Generally clean

No.	Version: A	Date 10 Sep 2003	Page 13 of 18
-----	------------	------------------	---------------

- Fair
- Poor

16. Is there any bad odor in the project area? Yes
 No

What is the source of Odor:- _____

17. What are the main sources of income of the surrounding community?
Farming and labouring in the developed zone.

18. Is there any site of cultural importance (graveyard, shrine, mosque archeological site) within 1,000 m of the proposed scheme?

- Yes
- No.

If yes, please describe? _____

19. Will the reservoir submerge any:

Village or house _____

Wetland:- _____

Forest :- _____

Sensitive vegetation :- _____

Wildlife habitat :- _____

Tomb or grave yard :- _____

Archeologically important site :- _____

No.	Version: A	Date 10 Sep 2003	Page 16 of 18
-----	------------	------------------	---------------

Social Assessment

Socio-economic and livelihood impacts.

1. What are the existing social livelihood system and common property resource management system of the communities?

The population is typically rural, engaged in rain-fed farming. Livestock is basically kept for own consumption and some times sold. Major off-season employment relates to the construction activities in other towns.

2. Access to government facilities for health and education and to drinking water?

Education and health facilities exist in the area. However with the development of the area the basic facilities will further be strengthened and modified.

3. What are the pattern of existing conflicts and existing mechanism of conflict resolution for areas under cultivation and grazing lands? Are there any potential conflicts between and down stream communities?

NA

4. What are the benefits perceived by communities of dam (please consult men and women separately):-

Generally the socio-economic conditions and standard of life of the people will be uplifted and the communities will have better life standards.

5. What role local institutions and communities will have in management and operation of the dam

NA

6. Assessment of the potential conflicts between lower and upper riparian communities if any (history of conflicts in the area, claims on lands, disputes etc)

NA

7. How was the process of consultation carried out, conducted and documented with communities above and below the proposed dam site?

Due to the feasibility and greater public demand the construction of small dams is proposed.

No.	Version: A	Date 10 Sep 2003	Page 17 of 18
-----	------------	------------------	---------------

8. Cultural and religious sites of community significance in the area to be submerged:-

_____ NA _____

General Analysis and impacts

9. What level of consultation with men and women for the project was carried out?

_____ Not required _____

10. What is the target (both direct and indirect) of the proposed project? Who will benefit? Who will lose?

The communities in the project area are the target. They will get both direct and indirect benefits from the proposed project. No one will lose.

11. How marginalized communities benefit by this project?

Due to the general development of the standard of life of marginalized communities will also be improved.

12. Cultural social and religious constrains to community participation (men and women) if nay

_____ (NA) _____

WATER RESERVOIR IN ARID ZONES

No	Version A	Date 10 Sep 2003	Page 14 of 18
----	-----------	------------------	---------------

Form IV: Impact Assessment

	Tick if relevant	Mitigation Measures	Tick if proposed	
Potential Negative Environment Impacts.				Monitoring Plan
Socioeconomic Impact	<input type="checkbox"/>	To the extent possible local labor will be used for unskilled semi skilled and skilled jobs.	<input type="checkbox"/>	
Water related diseases	<input type="checkbox"/>	A formal resettlement plan will be prepared Sanitation and health care programs will be initiated for the population around the reservoir.	<input type="checkbox"/>	
Wildlife and vegetation	<input type="checkbox"/>	As far as possible the reservoir water level will be fluctuated to discourage growth of disease carrying insects. Minimum flow required to maintain vegetation will be determined and it will be ensured that the flow is maintained. Operational rules will be defined for regulating downstream flows at critical times to protect habitat for reproduction or migratory routes.	<input type="checkbox"/>	
Safety Concerns	<input type="checkbox"/>	Provision for the migration of fish and other aquatic organisms will be provided if needed. The surroundings communities will be informed about the construction schedule and will be briefed about the safety procedures.	<input type="checkbox"/>	

WATER RESERVOIR IN ARID ZONES

Potential Negative Environment Impacts.	Tick if relevant	Mitigation Measures	Tick if proposed	Monitoring Plan
	<input type="checkbox"/>	<p>A comprehensive plan for operation maintenance and rehabilitation will be prepared.</p> <p>This should include inspections, evaluations, modifications and upgrades of the dams to ensure that they meet safety standards.</p> <p>Emergency action plans will be prepared training will be provided to dam operators.</p> <p>A periodic and through review of the rainfall and runoff characteristics as well as the identification of other changes in the hydrology of the basin will be undertaken to monitor the changes in the hydrology characteristics of the stream basin.</p>	<input type="checkbox"/>	
Risk of erosion and landslide	<input type="checkbox"/>	Stabilization measures will be undertaken.	<input type="checkbox"/>	
Construction	<input type="checkbox"/>	Construction waste (excess rock and soil, demolition waste, etc) will be disposed at <u>appropriate</u> (location)	<input type="checkbox"/>	
		All properties utility lines and other structures damaged during the construction will be restored.	<input type="checkbox"/>	