

For non-users

**ECONOMIC AND ENVIRONMENTAL PERSPECTIVES OF MICRO HYDRO POWER: A CASE STUDY
OF DISTRICT DIR (UPPER) KHYBER PAKHTUNKHWA (KPK)**

Study survey for MS/M.Phil Thesis

Questionnaire

(For Non-users of the MHP electricity)

**Department of Environmental Economics
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Household Roster

PART A: GENERAL INFORMATION

- A1. Name of the head of the household.....
- A2. Father name
- A3. Name of the respondent if other than head of the house hold.....
- A4. Quom/zaat/Baradri of (HH).....
- A5. Religion.....
- A6. Union Council..... A7. District.....
- A8. Tehsil.....A9. Village.....
- A10. Mohalah.....

Enumerator's Name.....

Signature.....

PART B: Household socio economic and demographic information.

B1.Total number of household members.....

B2. Area of agricultural land in Acres.....

B3. Main source of income

1 Agriculture

4 Remittances

2 Livestock

5 Business

3 Govt salary/pension

6 others

B4. Monthly Expenditure :(in RS)

#	Item	Expenditure
1	Food	
2	Clothing	
3	House rent(if rented)	
4	Health	
5	Energy	
6	Education	
7	Transport	
8	Social events(marriages)	
9	Others. Specify	
Total		

PART C: Households not connected to Micro hydro power plant (MHP)

C1. Do you use electricity of WAPDA? 1 yes 2 No

(If NO, then go to Q No D1)

C2. If yes, for what purpose do you use electricity in your home?

- | | |
|--|--|
| 1 <input type="checkbox"/> Home lighting | 4 <input type="checkbox"/> Cooling |
| 2 <input type="checkbox"/> Home appliances | 5 <input type="checkbox"/> Economic activity |
| 3 <input type="checkbox"/> Heating | 6 <input type="checkbox"/> Others |

C3. For how much time do you use light in 24 hours?

- 1 <8 hours
- 2 8-12 hours
- 3 13-17 hours
- 4 ≥18 hours

C4. For how many hours electricity of WAPDA is available?

Winter

summer

- | | |
|---------------------------------------|---------------------------------------|
| 1 <input type="checkbox"/> <5 Hours | 1 <input type="checkbox"/> < 5 hours |
| 2 <input type="checkbox"/> 5-8 hours | 2 <input type="checkbox"/> 5-8 hours |
| 3 <input type="checkbox"/> 9-13 hours | 3 <input type="checkbox"/> 9-13 hours |
| 4 <input type="checkbox"/> > 13 hours | 4 <input type="checkbox"/> > 13 hours |

C5. What is the average monthly electricity bill that you are paying for WAPDA electricity?

RS.....

C6. The connection charges/meter installation charges in Rs.....

C7. Load shedding is scheduled or unscheduled?

- | | |
|--------------------------------------|--|
| 1 <input type="checkbox"/> Scheduled | 2 <input type="checkbox"/> Unscheduled |
|--------------------------------------|--|

C8. Are you satisfied with the present availability of WAPDA electricity?

- 1 Highly satisfied
- 2 Satisfied
- 3 Neutral
- 4 Dissatisfied
- 5 Highly dissatisfied

D: Household Economic Activities (Non users of MHP)

D1. Do you have any economic activity in your household?

- 1 Yes
- 2 No

D2. If yes, what type of activity?

- 1 Tailoring
- 2 Knitting
- 3 Food processing
- 4 Embroidery
- 5 Grain grinding
- 6 Others

D3. What electric appliances do you have in your household?

- 1 TV
- 2 Fridge
- 3 washing machine
- 4 Blenders
- 5 computers
- 6 others

D4. Are they functioning now? 1 yes 2 No

D5. What do you use as an alternative source of energy?

- 1 Manual energy
- 2 WAPDA electricity
- 3 Solar cells
- 4 UPS
- 5 Diesel generators
- 6 others

D6. What is the per month cost of using the given source of energy?-----

D7. If electricity is used, for how many hours in a day do you use electricity of WAPDA in this activity?

1 2-4 hours

3 6-8 hours

2 4-6 hours

4 >8 hours

D8. Income per month from this activity in RS.....

D9. Do you experience any fluctuation in the voltage of WAPDA electricity while you are working? 1 Yes 2 No

D10. If yes, does it cause any damage to the machinery or appliances in the household?

1 Yes

2 No

D11. If yes, then how much it cost to repair it?in RS

E: ENVIRONMENT

Note. The data of fire wood, kerosene oil, diesel, LPG, and other energy sources will be taken from households to estimate the use of fuels.

E1. What is your main source of lighting?

1 WAPDA electricity

4 Solar cells

2 Kerosene oil

5 Generators

3 Car batteries

6 Others

E2. What is your primary fuel for cooking?

1 Fuel wood

4 Electricity

2 LPG

5 Kerosene oil

3 Dung cakes

6 others. Specify.....

E3. What is your primary fuel for space heating?

- 1 Fuel wood
- 2 LPG
- 3 WAPDA electricity
- 4 Others. Specify.....

E4. Quantity of fire wood and fuels used per month and their associated cost

#	<i>Fuels used</i>	<i>Unit</i>	<i>Price/unit</i>	<i>Total quantity</i>	<i>Expenditure</i>
1	Fuel wood	Kg			
2	Dung cakes	No			
3	Kerosene oil	Liters			
4	LPG	Kg			
5	Others, specify.....				
Total					

E5. Do you use car batteries for lighting in your home?

- 1 Yes
- 2 No

E6. If yes, what is its purchased price?----- Rs

E7. Do you use solar cells?

- 1 Yes
- 2 No

E8. If yes, what is its purchased price?-----Rs

Thank you for your cooperation

For users

Economic and Environmental perspectives of Micro Hydro Power: A case study of District Dir (upper) Khyber Pakhtoonkhwa.

Note: The information collected through this questionnaire will be kept confidential and will be used only for research purpose.

Questionnaire for Micro Hydro power plant:

Name of the village.....

Union council.....

Tehsil.....District.....

Date.....Time.....

Name of Enumerator.....

Signature.....

Date

Section A

Micro Hydro Power (MHP) Plant

Specification

A1: Electricity generation capacity of the power plant in (kW).....

A2: Started operation in (year).....

A3: Ownership

1 Government

2 Community

3 Private

A4. Name of the organization who installed the plant.....

A5. Number of households connected to the plant.....

A6. Number of households not connected to the plant.....

A7. Hours of electricity supplied to the households per
day.....From.....To.....

A8. Electricity bill collected from the households per month in Rs.....

A9. Electricity bill collected from shops and businesses per month in Rs.....

A10. Total bill collected in RS per Month.....Per annum.....

Section B

Issues

B1. Name of operator/respondent.....

B2. Age.....years

B3. Education.....

B4. Experience in operating of MHP.....Years.....Months.....

B5. Do you have any technical skills for the operation of the plant?

1 Yes

2 No

B6. If yes, what type of skills?

1 Electrical

2 Mechanical

3 Plumbing

4 Others

B7. Have you acquired any technical training for the successful operation of MHP plant?

1 Yes

2 No

B8. If yes, duration of the training in years.....months

B9. Who repair the plant in case of any fault?

1 Operator

2 owner-cum operator

3 Hire from the market

B10. Is there any shortage in the flow of water during any season of the year?

1 Yes 2 No

B11. If yes, is it in winter or summer?

1 Winter

2 Summer

B12. How much electricity is reduced in hours?

1 2-3 hours

2 4-5 hours

3 6-7 hours

4 More than 7 hours

B13. Do the floods in summer affect the power plants?

1 Yes

2 No

B14. If yes, to what extent?

1 partially damage

2 Complete damage

3 Complete sweep

B15. Are there any institutional arrangements for reducing the risk associated with floods?

1 Yes

2 No

B16. If yes, what are those arrangements?

1 community involvement

2 Help from the government

3 Help from NGO's

4 Others, specify.....

B17. Are there any geological changes that affect these plants negatively?

1 Yes 2 No

B18. If yes, then state the nature of those changes.

1 land slides
2 Rock fall
3 Storm gully
4 Others

B19. Is any community member willing to offer his land free of cost to the community or government for the installation of MHP plant?

1 Yes
2 No

B20. If no, then on what terms and conditions he will be willing to offer?

1 Yearly lease
2 on monthly rent
3 Free electricity
4 other incentives

B21. Is there any transformer installed with the power plant?

1 Yes
2 No

B22. If no, then what is the reason behind that?

1 Due to unawareness
2 Lack of financing
3 Due to the negligence on the part of contractors/project executers.
4 Any other

Thank you