"Farmers' Water Use, Energy Access, and Policy Preferences: A Survey in Three Indian States"*

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A. Metadata, Introduction, and Geography

A1. MetaData

***Interviewers**: Only administer interview to the household head. If unavailable at time of first approach, inquire as to availability later in the day, and return at this time. If household head will not be available that day, or if upon second visit the head is not available, administer to another household.*

A1.1 Household ID _____

A1.2 ID and Name of Interviewer _____

A1.3 ID and Name of Supervisor _____

A1.4 Date of Interview _____

A1.5 Interview Start Time _____

A1.6 Date of First Contact _____

A1.7 Reason if first contact with household was not possible _____

A1.8 Date of Second Contact _____

A1.9 Reason if second contact was not possible _____

A1.12 If contact was not possible after 2 tries, replaced by Household ID number: _____

A2 Introduction to the Household Head

Hello! I work with MORSEL, an organization based in Lucknow that conducts surveys in India. *[Interviewer shows ID card to the respondent]*. Your household has been selected to participate in a short survey. The survey is a Columbia University study and is led by Dr. Johannes Urpelainen. It will take no more than 45 minutes. Would you like to participate? *[Interviewer to record response]*

A2.14 Did the household head agree to be interviewed? 1 Yes 0 No

A2.15 If no, record the reason why the household head did not agree to be interviewed _____

A3 Geographic Information/

A3.1 State _____ A3.1.1 State Unique Identifier Code _____

A3.2 District _____ A3.2.1 State Unique Identifier Code _____

A3.3 Block _____ A3.3.1 State Unique Identifier Code _____

A3.4 Village Name _____ A3.4.1 Village Unique Identifier Code _____

A3.5 Hamlet _____ A3.5.1 Hamlet Unique Identifier Code _____

A3.6 Full Address _____

A3.7 Mobile Contact Number (if any) _____

B. Household Head/

Interviewer *state the following:* I will begin this interview by asking you a few basic questions.

B1 Demographic Information/

B1.1 Name _____

B1.2 Age _____ YEARS

B1.3 Gender 1 Male 0 Female

B1.4 Years of Schooling? _____

B1. 5a. Can you read? 1 Yes 0 No

B1. 5b. Can anyone else in your family read? 1 Yes 0 No

B1.6 Religion? 1 Hindu 2 Muslim 3 Other

B1.6a Government Caste? 1 Scheduled Caste 2 Scheduled Tribe 3 Backward Caste 4 General 5 Other 6 No Caste

B1.6b What is your exact caste/tribe, if any? _____ [NA if unwilling respond]

B1.7a Marital Status? 1 Married 0 Not Married

B1.8 Have you worked in the past month? 1 Yes 0 No

B1.9 Do you have a government ration card? 1 Yes 0 No

B1.10 Do you have a BPL card? 1 Yes 0 No

B1.11 Do you have a voter ID card? 1 Yes 0 No

B1.12 How many adults are living in your family? ___ NUMBER

B1.13 How many children (less than 18 years) are living in your family? ___ NUMBER

B2 Social Capital

B2.1 Are you a member of any political party organizations? 1 Yes 0 No

B2.2 Aside from political parties, are you a member of any religious or caste-based organization ?
1 Yes 0 No

B2.3 Aside from political parties, religious or caste-based associations, are you a member of any other organizations or associations? CHECK IF YES

a) Co-operatives 1 Yes 0 No
b) Farmer's associations 1 Yes 0 No
c) Trade unions 1 Yes 0 No
d) Welfare organizations 1 Yes 0 No
e) Cultural organizations 1 Yes 0 No
f) Sports organizations 1 Yes 0 No
g) Panchayat member (now or past) 1 Yes 0 No
h) Others _____ Please list: _____

B2.4 Do you trust or distrust the state government?
_____1. Distrust very much _____2. Distrust somewhat _____3. Neutral
_____4. Somewhat trust _____5. Trust very much _____6. Don't know

B2.5 Do you trust or distrust the national government?
_____1. Distrust very much _____2. Distrust somewhat _____3. Neutral
_____4. Somewhat trust _____5. Trust very much _____6. Don't know

B2.6 How often do you read/listen/watch state news?

_____1. Every day _____2. Several times a week _____3. Once a week
_____4. A few times a month _____ 5. About once a month _____6. Every few months or fewer

_____7. Never _____8. Don't know

B2.7 How often do you read/listen/watch national news?

_____1. Every day _____2. Several times a week _____3. Once a week
_____4. A few times a month _____ 5. About once a month _____6. Every few months or fewer

_____7. Never _____8. Don't know

C. Housing, Assets, and Economic Activities

C1 Housing and Assets

C1.1 Do you own your home? 1 Yes 0 No

C1.2 Do you own a television? 1 Yes 0 No

C1.3 Do you own a mobile phone? 1 Yes 0 No

C1.4 Do you own a bicycle? 1 Yes 0 No

C1.5 Do you own a motorcycle? 1 Yes 0 No

C1.6 Do you own a car? 1 Yes 0 No

C1.7 Do you own an LPG stove? 1 Yes 0 No

C1.8 Do you own a pressure cooker? 1 Yes 0 No

C1.9 Do you have a bank account? 1 Yes 0 No

C1.10 Do you have a computer in your home? 1 Yes 0 No

C1.11a Do you own livestock? 1 Yes 0 No

C1.11b If (1) yes, how many _____

C1.12 How much land do you own? NUMBER HERE: _____ UNIT HERE: _____

C1.13 How much land do you rent? NUMBER HERE: _____ UNIT HERE: _____

C1.14 How much land do you sharecrop? NUMBER HERE: _____ UNIT HERE: _____

C1.15 On how much land do you cultivate crops? NUMBER HERE: _____ UNIT HERE: _____

C1.16 Do you have land on which you cultivate / maintain trees? 1 Yes 0 No

C1.17 What farming implements, machinery, etc. do you own? _____ _____ _____

C1.18a Do you collectively share any farming implements, machinery, etc. with other farmers? 1 Yes 0 No

C1.18b If Yes, which? _____

C1.19 How many plots is your land divided into? _____

C1.20a What is the size of the biggest plot? NUMBER HERE: _____ UNIT HERE: _____

C1.20b What is the size of the smallest plot? NUMBER HERE: _____ UNIT HERE: _____

C1.21a Of the land that you have, how much do you cultivate during Kharif? (***Enumerators:*** *give examples of local Kharif crops*): _____ NUMBER _____ UNIT

C1.21b Of the land that you have, how much do you cultivate during Rabi? *(**Enumerators:** give examples of*

local Rabi crops): _____ NUMBER _____ UNIT

C1.22a How much of this land that you cultivate in Rabi is irrigated? NUMBER HERE: _____ UNIT HERE: _____

C1.22b Of this land irrigated in Rabi, how much is irrigated from groundwater? NUMBER HERE: _____ UNIT HERE: _____

C1.23a How much of the land that you cultivate in Kharif is irrigated? NUMBER HERE: _____ UNIT HERE: _____

C1.23b Of this land irrigated in Kharif, how much is irrigated from groundwater? NUMBER HERE: _____ UNIT HERE: _____

C1.24a How much land do you lease to others / rent out? NUMBER HERE: _____ UNIT HERE: _____

C1.24b Of the land that you rent, how much do you lease to others / rent out in Kharif? NUMBER HERE: _____ UNIT HERE: _____

C1.24c Of the land that you rent, how much do you lease to others / rent out in Rabi? NUMBER HERE: _____ UNIT HERE: _____

C1.24d Of the land that you rent, how much do you lease to others / rent out perennially? NUMBER HERE: _____ UNIT HERE: _____

C2 Economic Activity

The interviewer asks the following:

C2.1 What percentage of your household's earnings comes from farming activities? _____

C2.2 How many rupees a month does your household spend? _____

C2.3 How many rupees a month does your household save? _____

C2.4a Is your household currently indebted? 1 Yes 0 No

C2.4b If (1) Yes, How much is your current debt? _____

C2.5a Do you or anyone in your household work for a company / someone else? 1 Yes 0 No

C2.6a Do you or anyone in your household run your own non-agricultural business? 1 Yes 0 No

D. Farming Practices

D1 Land and Crops

D1.1a Rabi main crop name: _____

D1.1b Area under cultivation: _____

D1.1c Number of months per year under cultivation: _____

D1.1d Main crop earnings last year: _____rupees

D1.1e Times/year of irrigation: _____times per year

D1.1d Hours/day of irrigation: _____ hours

D1.1f Main crop is cultivated? 1 Perennially 2 Only Kharif 3 Only Rabi

D1.2a Kharif main crop name: _____

D1.2b Area under cultivation: _____

D1.2c Number of months per year under cultivation: _____

D1.2d Secondary crop earnings last year: _____rupees

D1.2e Times/year of irrigation: _____ times per year

D1.2f Hours/day of irrigation: _____ hours

D1.2g Secondary crop is cultivated? 1 Perennially 2 Only Kharif 3 Only Rabi

*Note: (**Enumerators**: Do farmers grow a third crop? If yes proceed to D1.5, if no proceed to section D2)*

D1.3a Other crop name: _____

D1.3b Area under cultivation: _____

D1.3c Number of months per year under cultivation: _____

D1.3d Third crop earnings last year: _____rupees _____ month

D1.3e Times/year of irrigation: _____times per year

D1.3f Hours/day of irrigation: _____ hours

D1.3g Third crop is cultivated? 1 Perennially 2 Only Kharif 3 Only Rabi

D1.4 Vegetables (all Vegetables below refers to fruit trees as well): Did you grow vegetables last year? 1 No 2 Yes, but only for personal use 3 Yes, but only for personal use and sometimes sale/exchange with neighbors 4 Yes , and some are sold for income

***Enumerators**: List vegetables below first, second, third etc. based on area of cultivation; if farmers say that areas are roughly the same, this is not a problem, choose whichever vegetable they mention first. Fill in as many names as listed, if only 1 or 2 vegetables are grown, leave remaining sections blank.*

D1.4a Vegetable 1 name _____

D1.4b Vegetable 1 cultivation area _____

D1.4c Vegetable 1 number of times irrigated from planting to harvesting _____

D1.4d Vegetable 1 plot has tubewell/borewell on plot? 1 Yes / 0 No

D1.4e Vegetable 1 plot has tubewell/borewell on neighbors' adjacent plot? 1 Yes / 0 No

D1.4f If Vegetable 1 is sold, how many rupees were earned for this vegetable last year _____

D1.5a Vegetable 2 name _____

D1.5b Vegetable 2 cultivation area _____

D1.5c Vegetable 2 number of times irrigated from planting to harvesting _____

D1.5d Vegetable 2 plot has tubewell/borewell on plot? 1 Yes / 0 No

D1.5e Vegetable 2 plot has tubewell/borewell on neighbors' adjacent plot? 1 Yes / 0 No

D1.5f If Vegetable 2 is sold, how many rupees were earned for this vegetable last year _____

D2 Inventory / History of Irrigation Assets

D2.1 Do you have access to public borewells/tubewells? 1 Yes 0 No

D2.2a Is there a water user's association in your community? 1 Yes 0 No

D2.2b If 1 Yes, are you a member? 1 Yes 0 No

D2.2c If 0 No, was there a water user's association in your area in the past? 1 Yes 0 No

Enumerators: *if (1) Yes to D2.1, continue with D2.3 if (0) No, continue with D2.5*

D2.3a What percent of total irrigation water used over a year is provided by state borewells/tubewells? _____

D2.3b How many days a year of access to state borewells/tubewells? _____ days

D2.4a What percent of total irrigation water used over a year is provided by community borewells/tubewells? _____ D2.4b

D2.4b How many days a year of access to community borewells/tubewells _____ days

D2.5a If you do not currently have access to public bore wells, did you in the past? 1 Yes 0 No

D2.5b If (1) Yes, how many years ago did access end? _____

D2.6 Do you have access to groundwater brought up by human or livestock power? 1 Yes 0 No

Enumerators: *if (1) Yes to D2.6, continue with D2.7 if (0) No, continue with D2.8*

D2.7a What percent of total irrigation water is provided by this well(s)? _____%

D2.7b How many hours a day do you irrigate using this well(s)? _____ hours

D2.7c How many days a year do you irrigate using this well(s)? _____ days

D2.7d Is this groundwater brought up through a well(s) that is on your land? 1 Yes 0 No

D2.7e What source of power is used to bring up this water?

1 Myself / my family 2 My livestock 3 Both myself / my livestock 4 Other's labor 5 Other's livestock 6 Both other's labor / other's livestock

D2.8 Do you have access to groundwater brought up through a well/wells powered by an electric pump? 1 Yes 0 No

Enumerators: *if (1) Yes to D2.8, continue with D2.9 if (0) No, continue with D2.10*

D2.9a What percent of total irrigation water is provided by this well? _____%

D2.9b How many hours a day do you irrigate using this well(s)? _____ hours

D2.9c How many days a year do you irrigate using this well(s)? _____ days

D2.9d Is this groundwater brought up through a well on your land? 1 Yes 0 No

D 2.9e How many hours a day is electricity usually available during kharif? ____ HOURS [0-24]

D 2.9f How many hours a day is electricity usually available during rabi? ____ HOURS [0-24]

D 2.9g How common are outages that last less than a day? ___ TIMES IN ____ [TIME PERIOD]

D 2.9h How common are outages that last more than a day? ___ TIMES IN ____ [TIME PERIOD]

D2.9i Do you usually know ahead of time when the power will go out?

1 Yes, usually 2 Yes, sometimes 3 No

D2.9j How common is fluctuation in voltage (too low or too high)?
___ TIMES IN ____ [TIME PERIOD]

D2.9k How often does your motor burn out because of electricity issues?
___ TIMES IN ____ [TIME PERIOD]

D2.10 Do you have access to groundwater brought up through a well/wells powered by a diesel pump? 1 Yes 0 No

Enumerators: *if (1) Yes to D2.10, continue with D2.11 if (0) No, continue with section E1*

D2.11a What percent of total irrigation water is provided by this well? _____%

D2.11b How many hours a day do you irrigate using this well(s)? _____ hours

D2.11c How many days a year do you irrigate using this well(s)? _____ days

D2.11d Is this groundwater brought up through a well on your land? 1 Yes 0 No

E. Irrigation Practices and Equipment

E1 Water access history:

E1.1 Your primary source of water for irrigation is (choose one): 1. No irrigation 2. Only surface water 3. Only bore well 4. Both surface water and bore well

Continue to E1.2 Only *if E1.1 is (4) both surface water and bore well*:

E1.2 What percentage of water is from bore-well _____%

Enumerator: Based on answers to E1.1 *- continue to E1.3 below ONLY IF interviewee answers (3) or (4) to question E1.1. IF interviewee selects (1) or (2) CONTINUE TO SECTION E2*

E1.3a Primary Bore owned, rented or water purchased? 1 Owned 2 Rented 3 Water Purchased

Enumerator*: if interviewee answers (1) Owned, continue with E1.3b, E1.3c, E1.3d, E1.3e, E1.3f,* E1.3g *; if interviewee answers (2)Rented, continue with E1.3h and E1.3i; if interviewee answers (3) Water purchased, continue with E1.3i and E1.3j*

Enumerator*: if interviewee owns multiple pumps, ask for information about most recently purchased one.*

E1.3b if (1) Owned, How much did the pump initially cost? _____ rupees

E1.3c if (1) Owned, How much did the pump initially cost to install? _____ rupees

E1.3d if (1) Owned, What were the sources of money for initial purchase/installation (select all that apply)

1) Own savings 2) Loan from bank 3) Loan from family 4) Loan from moneylender 5) Loan from bank 5) Loan from microfinance project 6) Other: _____

E1.3e if (1) Owned, How much does maintenance cost per year? _____ rupees

E1.3f if (1) Owned, Other than maintenance costs, how much money do you pay per season (diesel fuel or electricity charges) for the pump during Kharif? _____

E1.3g if (1) Owned, Other than maintenance costs, how much money do you pay per season (diesel fuel or electricity charges) for the pump during Rabi? _____

E1.3h if (2) Rented, how much do you pay to rent during Kharif? _____rupees per ___ time period

E1.3i if (2) Rented, how much do you pay to rent during Rabi? _____rupees per _____time period

E1.4 Primary pump's Horse Power? _____

E1.5a Primary pump number of hours running on average day during Kharif _____hours/day

E1.5b Primary pump number of days running during Kharif _____days

E1.6a Primary pump number of hours running on average day during Rabi _____hours/day

E1.6b Primary pump number of days running during Rabi _____days

E1.7a Primary Bore Depth? _____

E1.7b Did it ever happen that a bore used to get water from failed permanently? 1 Yes 0 No

E1.7c If (1) yes, how many times over last 10 years? _____ times

E1.8 Number of bores you get water from? _____ bores

E1.9 Of these, number of bores rented? _____bores

E1.10 Of these, number of bores owned or partially owned? _____bores

E1.11 Of these, number of bores you pay for access to without share? _____ bores

E1.12 Of these, number of bores you have a guaranteed water share? _____ bores

E1.13a Are you in need of more water for irrigation of your land? 1 Yes 0 No

E1.13b If (1) yes, what is preventing you from getting more water? 1. Too expensive 2. No more water available at all 3. No more water available at the needed times

E1.14 Do you share your pump(s) with any neighbors in exchange for access to their tubewell/borewell? 1 Yes 0 No

E1.15 Do you share access to a tubewell/borewell with any neighbors in exchange for use of their pump(s)? 1 Yes 0 No

E2 Water Prices and Impacts of Water Access

E2.1 What is preventing you from using more water? _____ [OPEN-ENDED]

How does the cost of rent/access to water today compare to the cost of using water:

E2.2 10 years ago? 1. Much lower 2. Lower 3. About the same 4. Higher 5. Much higher 6. Don't remember/don't know

SKIP NEXT QUESTION IF FARMER DOES NOT RENT PUMP OR ACCESS TO BOREWELL: *How much does the cost of renting/access to water change:*

E2.3a Based on the time of month? 1. Not at all 2. A little bit 3. Somewhat 4. Very much

E2.3b Based on the time of year? 1. Not at all 2. A little bit 3. Somewhat 4. Very much

E2.4 How reliable do you feel your access to water is in general? 1. Rarely/never reliable 2. Sometimes reliable 3. Usually reliable 4. Always reliable

E2.5 How reliable do you feel your access to water is in Rabi? 1. Rarely/never reliable 2. Sometimes reliable 3. Usually reliable 4. Always reliable

E2.6 Let us assume, there are two major kharif crops grown in your village. One crop is more water intensive compare to other one. So when you decide which crop to sow/grow, how much importance does the total amount of water needed to grow that crop, and the cost of getting that water, hold for you?
1. Not important at all 2. Al ittle bit important 3. Moderately important 4. Very important

E2.7 Let us assume, there are two major rabi crops grown in your village. One crop is more water intensive compare to other one. So when you decide which crop to sow/grow, how much importance does the total amount of water needed to grow that crop, and the cost of getting that water, hold for you? 1. Not important at all 2. A little bit important 3. Moderately important 4. Very important

E2.8 Do you know approximately how far down is water table in your area during Rabi period? 1 Yes 0 No

E2.8a If (1) Yes, how deep? NUMBER: _____UNITS: _____

E2.8b If (1) Yes, how does this compare to the depth during Rabi 10 years ago? 1. Higher 2. About the same 3. Slightly deeper 4. Much deeper 5. Don't remember / don't know

E2.9 Do you know approximately how far down is water table in your area during Kharif period? 1 Yes 0 No

E2.9a If (1) Yes, how deep? NUMBER: _____UNITS: _____

E2.9b If (1) Yes, how does this compare to the depth during Kharif 10 years ago? 1. Higher 2. About the same 3. Slightly deeper 4. Much deeper 5. Don't remember / don't know

F. Water Pumping Technology

F1 Technology Preferences

Enumerator: *if interviewee only uses Human/Animal Power or Diesel pumps, continue from F1.1-F1.4; if interviewee only uses Human/Animal Power or Electric pumps, continue from F1.5-F1.8, if interviewee uses a mix of power sources, continue from F1.9*

[If Interviewee indicated in that water used only comes from diesel pumps and/or human/animal power]

F1.1 Have you ever used electric pumps in the past? 1 Yes 0 No

F1.2 If (1) Yes, how many years ago did you stop using electric pumps? _____years

F1.3 If (1) Yes, approximately what percentage of your water was pumped with electric when you used electricity? _____ percent.

F1.4 If (0) The **main/primary** reason you've never used electric pumps –
(Enumerators: Don't read options, select chosen)
_____1. Electricity is not available
_____2. Electricity is not reliable
_____3. Electricity is not on when crops need to be irrigated
_____ 4. The farmer(s) who own the well(s)prefers diesel
_____5. Farmers who own other shares of my well prefer diesel
_____6. Electric pumps are not available
_____7. Electric pumps are too expensive compared to human/animal power
_____8. Electric pumps are too expensive compared to diesel pumps
_____9. Don't know/not sure
____10.Other:specify

[If Interviewee indicated that water used only comes from electric pumps and/or human/animal power]

F1.5 Have you ever used diesel pumps in the past? 1 Yes 0 No

F1.6 If (1) Yes, how many years ago did you stop using diesel pumps? _____years

F1.7 If (1) Yes, approximately what percentage of your water was pumped with diesel when you used diesel? _____ percent

F1.8 If (0) The **main/primary** reason you've never used diesel pumps:_____
. Diesel is not availabl
____1. Dieselis not available
_____2. Diesel is not reliable
_____3. Diesel is not available during peak irrigation times/season
_____4. The farmer(s) who own the well(s)prefers electricity
_____5. Farmers who own other shares of my well prefer electricity
_____6. Diesel pumps are not available
_____7. Diesel pumps are too expensive compared to human/animal power
_____8. Diesel pumps are too expensive compared to electric pumps
_____9. Don't know/not sure

*** THREE CONDITIONAL QUESTIONS – DO NOT ASK IF NO MIX – ONLY FOR FARMERS WHO USE BOTH DIESEL AND ELECTRIC PUMPS ***

F1.9 What percentage of your water is currently pumped with diesel? _____

F1.20 What percentage of your water is currently pumped with electric? _____

F1.21 What percentage of your water is currently pumped with human/animal power? _____

F2 Technology Availability and Markets

F2.1a Would you be able to locate an electric pump for sale in a nearby / accessible market? 1. Yes, easily 2. Yes, with some effort 3. Yes with difficulty 4. No 5. Don't know / not sure

***** IF RESPONDENT HESITATES, CODE AS "DON'T KNOW AND PROCEED"**

F2.2a Would you be able to locate a diesel pump for sale in a nearby / accessible market? 1. Yes, easily 2. Yes, with some effort 3. Yes with difficulty 4. No 5. Don't know / not sure

H. Political Economy

H1 Past Political Preferences

H1.1 In the last election, candidates' policies on electricity were an important part of how I decided whom to support? 1. Not at all 2. A little bit 3. Somewhat important 4. Very important

H1.2 In the election before the last, candidates' policies on electricity were an important part of how I decided whom to support? 1. Not at all 2. A little bit 3. Somewhat important 4. Very important

H1.3 In the last election, candidates' policies on diesel subsidies were an important part of how I decided whom to support? 1. Not at all 2. A little bit 3. Somewhat important 4. Very important

H1.4 In the election before the last, candidates' policies on diesel subsidies were an important part of how I decided whom to support? 1. Not at all 2. A little bit 3. Somewhat important 4. Very important]

H2 Political Economy of Water Access

H2.1 Do you rent a pump to other farmers? 1 Yes 0 No
Enumerator: *IF 1 YES, continue with H2.2, if 0 no continue to H2.3*

H2.2a What percentage of water that you pump do you use for your own farms? _____

H2.2b How much money did you make renting a pump during kharif last year? _____ RUPEES

H2.2c What was the hourly rate for the pump during kharif? _____ RUPEES

H2.2d How much money did you make renting a pump during rabi last year? _____ RUPEES

H2.2e What was the hourly rate for the pump during rabi? _____ RUPEES

H2.3 Do you have a well that you rent to other farmers? 1 Yes 0 No

Enumerator: *IF 1 YES, continue with H2.4a, if 0 NO continue to H2.5*

H2.4a How much money did you make selling access to a well during kharif last year? ___ RUPEES

H2.4b What was the hourly rate for the access during kharif? _____ RUPEES

H2.4c How much money did you make selling access to a well during rabi last year? _____ RUPEES

H2.4d What was the hourly rate for the access during rabi? _____ RUPEES

Enumerator: *IF 1 YES to either H2.1 or H2.3 continue with H2.5-H2.9, if 0 NO continue to next Enumerators' note (below H2.9)*

H2.5a Which of the following is the **most important** factor that you use to set the price for the pump you rent and access you sell? 1. Costs of pumping 2. Demand from other farmers 3. Based on the prices other water sellers are asking 4. Based on the time of day 5. Based on the time of year 6. Based on the value of the crops that the farmer's will use the water to grow 7. Don't know / not sure

H2.5b Which of the following is the **second most important** factor that you use to set the price for the water you sell? 1. Costs of pumping 2. Demand from other farmers 3. Based on the prices other water sellers are asking 4. Based on the time of day 5. Based on the time of year 6. Based on the value of the crops that the farmer's will use the water to grow 7. Don't know / not sure

H2.6 Do you talk to other water sellers in your area about the prices that you will charge for water before deciding? 1. Never 2. Sometimes 3. Usually 4. Always

H2.7 Do you sell other goods or services to the farmers you sell water to? 1 Yes 0 No

H2.8 Do you buy other goods or services from the farmers you sell water to? 1 Yes 0 No

H2.9 Aside from when you're selling water, how frequently do you talk to the farmers who you sell to? _____times/month

ENUMERATORS: *Questions only if farmers rent pumps or rent access to borewells / tubewells. If farmers do not rent pumps or rent access to borewells / tubewells, continue to section H3*

H2.10 Do you talk to other farmers your area about the prices that you will pay to rent pumps or pay for access to wells, before deciding when/from whom to buy? 1. Never 2. Sometimes 3. Usually 4. Always

H2.11 Do you buy other goods or services from the farmers you rent pumps from / pay for access to wells? 1 Yes 0 No

H2.12 Do you sell other goods or services to the farmers you rent pumps from / pay for access to wells? 1 Yes 0 No

H2.13 Aside from when you're renting pumps / paying for access to wells, how frequently do you talk to the farmers who you rent from/ pay for access? _____times/month

H2.14 I am able to negotiate a fair price for renting pumps / paying for access to wells: 1. Never 2. Sometimes 3. Usually 4. Always

H2.15 Farmers who rent pumps / pay for access to wells coordinate beforehand to make sure that they get fair prices: 1. Never 2. Sometimes 3. Usually 4. Always

H2.16 If I complained too much about the costs of renting pumps / paying for access to wells too much, I might have difficulty renting / getting access in the future: 1. No 2. Unlikely 3. Probably 4. Definitely

H2.17 If I complained too much about the costs of renting pumps / paying for access to wells too much, there might be problems with some other aspect of village life in the future: 1. No 2. Unlikely 3. Probably 4. Definitely

H2.18 Price is the main determinant of whom I rent pumps from / pay for access to wells: 1. Never 2. Sometimes 3. Usually 4. Always

H2.19 Access (location, infrastructure) is the main determinant of whom I rent pumps from / pay for access to wells: 1. Never 2. Sometimes 3. Usually 4. Always

H2.20 If I could change whom I rent pumps from / pay for access to wells, I would like to: 1. Never 2. Rarely 3. Probably 4. Definitely

H2.21 In a given year, how many different people do you rent pumps from / pay for access to wells?
_____

H2.22 The people who rent pumps / sell access to wells also have political positions in the village or district? 1. None 2. A few 3. Some 4. Most

H2.23 The people who rent pumps / sell access to wells also have influence on district politicians? 1. No 2. A little bit 3. Somewhat 4. A lot

H2.24 The people who rent pumps / sell access to wells influence state politicians? 1. No 2. A little bit 3. Somewhat 4. A lot

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USE MP3 TO PLAY VIGNETTE FOR ELECTRIFIED AREAS OF PROJECT

REFER TO TRAINING NOTES AND FOLLOW RANDOMIZATION PROTOCOL [2x2 CROSS-CUTTING DESIGN: 4 GROUPS – CONTROL/CONTROL, CONTROL/TREATMENT, TREATMENT/CONTROL, TREATMENT/TREATMENT]

H3 Policy Preferences for Water Pumping

Interviewers: *Use MP3 to play the following to half of the survey respondents, chosen at random and indicate if read based on TRAINING NOTES:* ***1 Yes or 0 No***

T1: "The electric utilities need to be profitable in order to provide reliable electricity and to financially survive into the future. Some people say it may not be possible to provide reliable electricity at current prices. If reliable electricity is provided at current prices, they say the utilities will go bankrupt in the future. According to this, ensuring reliable access for all over time may require everyone to pay several times the current price."

Interviewers: *Use MP3 to play the following to half of the survey respondents, chose at random and indicate if read based on TRAINING NOTES:* ***1 Yes or 0 No***

T2: "Installing feet for electric use would allow the electricity boards to charge current users based on how much electricity they use. Because of this, some farmers who pump more water than the average might pay substantially more for current water. At the same time, those farmers who pump less might pay substantially less."

Questions:

H3.1 Two politicians are campaigning against each other. One emphasizes limiting electricity prices. The other emphasizes ensuring that the utilities are financially sound and provide consistent electricity. Which politician would you be more likely to support? 1. The one who talks about limiting electricity prices 2. The one who talks about ensuring the utilities are financially sound and provide reliable electricity 3. The two are about the same 4. Don't know/not sure

H3.2 If a new private electric utility entered your district and offered consistent, reliable electricity for sale, how much would you be willing to pay? 1. No more than current rates 2. Slightly higher than current rates 3 Twice as high as current rates 4 More than twice as high as current rates 5. Would not be willing to pay 6. Don't know/not sure

H3.3 Do you think that the government should limit the amount of groundwater each farmer can pump? 1 Yes 0 No

H3.4 Do you think that the government should limit the amount of electricity that each individual farmer, no matter their landholding size, can use? 1 Yes 0 No

H3.5 Should electricity supply be metered and charged based on use? 1 Yes-for everyone 2 Yes-but only for volunteers and wealthy farmers 3 No 4 Don't know/not sure

H3.6 Do you think that government should subsidize diesel fuel for farmers' (agricultural uses only) even if

the same money could be used for other purposes, such as better roads and agricultural extension? 1 Definitely yes 2 Yes 3 Probably not 4 Definitely not 5 Don't know/not sure

H3.7 Should the government ensure that diesel fuel prices do not go to high by setting a maximum allowable price? 1 Definitely yes 2 Yes 3 Probably not 4 Definitely not 5 Don't know/not sure

H3.8 *(Implemented using pictures)*

For the five possible choices below, please rank the importance to you from 1 (most important) to 5 (least important) in order of how high a priority you think they should be for the government:

Rank: _____ a) Guaranteed to be affordable, high quality health clinics for everyone

Rank: _____ b) Guaranteed to be affordable, low electricity prices

Rank: _____ c) Guaranteed to be affordable, low interest loans for buying farming equipment

Rank: _____ d) Guaranteed to be affordable, low diesel prices

Rank: _____ e) Guaranteed to be affordable, high quality education for all students

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Diesel Vignette [*FOR BIHAR RESPONDENTS ONLY ***]**

VIGNETTE Yes Vs. No ONLY

Interviewers: *Use MP3 to play the following to half of the survey respondents, chose at random and indicate if read based on TRAINING NOTES:* ***1 Yes or 0 No***

T1: In Bihar, the state government can offer subsidies to reduce the price of diesel. While a lower diesel price benefits farmers, the subsidy is costly to the government. Without a diesel subsidy, the government can invest money to help farmers purchase electrified pumpsets that are less costly to operate than diesel pumpsets.

H4.1 Should the state government offer diesel subsidies?

1 Definitely yes 2 Probably yes 3 Neutral 4 Probably not 5 Definitely not 6 Don't know

H4.2 How important is it to you that the government help you invest in an electrified pump set?

1 Not at all important 2 Somewhat important[§] 3 Neutral 4 Not very important[**] 5 Very important 6 Don't know

H4.3 Which is more important for the government, keeping the diesel price low or providing farmers with access to electrified pumpsets?

1 Low diesel prices are much more important 2 Low diesel prices are somewhat more important 3 Neutral 4 Electrified pump set access is somewhat more important 5 Electrified pump set access is much more important

H4.4 Would you support a policy proposal by the government to increase the price of diesel and lower subsidies to help farmers gain access to electrified pumpsets?

1 Definitely yes 2 Probably yes 3 Neutral 4 Probably not 5 Definitely not 6 Don't know

H4.5 Would you support a policy proposal by the government to increase the price of diesel but guarantee to every farmer in India a subsidy to purchase an electrified pump set?

1 Definitely yes 2 Probably yes 3 Neutral 4 Probably not 5 Definitely not 6 Don't know

1 Definitely yes 2 Probably yes 3 Neutral 4 Probably not 5 Definitely not 6 Don't know

[§] Re-coded as "4" for final data analysis.
[**] Re-coded as "2" for final data analysis.