Topics Under DFS Report

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ACKNOWLEDGEMENT

SILENT FEATURES

Solar Irrigation System site survey form

Tools required during the survey	Checklist
GPS/Abney level	☐
Measuring tape (>50 meters)	☐
Camera, calculator, stopwatch	☐
Bucket (5-10 litres)	☐
Pen and notebook	☐

Documents to be collected from the site	Checklist
Land permit for solar array erection	☐
Land permit for water intake construction (collection tank, open well etc.)	☐
Land permit for distribution tank construction (if applicable)	☐

General information	
Date of survey	
Name of Irrigation Scheme (Published)	
Name of surveyor	
Organization	
Name of the client/s *Include names of the main local people who contributed to the information on the survey*	Phone no.
1.	1.
2.	2.
3.	3.
4.	4.
Is the user committee formed?	☐ Yes ☐ No
Describe how the community plan to distribute water.	☐ Sell water to beneficiaries ☐ Free distribution, no schedule ☐ Free distribution, water distribution scheduled by the community

<table>
<tr><td>Numbers of Members in User's Committee</td><td></td></tr>
<tr><td>Total Number of Beneficiaries</td><td></td></tr>
<tr><td>Is the user committee a legally registered entity?</td><td>☐ Yes ☐ No

If yes, name of legal entity: ……..</td></tr>
<tr><td>Planned Solar Irrigation System funding mechanism</td><td>☐ Partially subsidized
<table>
<tr><th colspan="2">Name</th><th>% contribution</th><th>Funding type</th></tr>
<tr><td>Name of entity 1</td><td></td><td></td><td>☐ subsidy
☐ equity
☐ loan</td></tr>
<tr><td>Name of entity 2</td><td></td><td></td><td>☐ subsidy
☐ equity
☐ loan</td></tr>
<tr><td>Name of entity 3</td><td></td><td></td><td>☐ subsidy
☐ equity
☐ loan</td></tr>
</table></td></tr>
<tr><td>Is there any conflict within the community regarding water use?</td><td>☐ Yes ☐ No

If yes, describe the conflict:
……

……
…….</td></tr>
</table>

Location information	
Tole name	
Village	
Ward no.	
Local Level Name	
District	
Province	
Is the vehicle accessible **up to the village?**	☐ Yes ☐ No

	Describe road type: ……..... Functionality: ☐ Year-round ☐ Seasonal, months of inaccessibility: ……..	
Is the vehicle accessible **up to the solar array location?**	☐ Yes ☐ No Describe road type: ……..... Functionality: ☐ Year-round ☐ Seasonal, months of inaccessibility: ……..	
Is the vehicle accessible **up to the water source?**	☐ Yes ☐ No Describe road type: ……..... Functionality: ☐ Year-round ☐ Seasonal, months of inaccessibility: ……..	
Name and distance of the nearest city/town from the site	Name	
	Distance	…….km

List crop names **currently practiced** and tick respective months of the plantation.

Crop name	Baisakh	Jestha	Asadh	Shrawan	Bhadra	Asoj	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												

Cost details of crops in **current practice**

Crop name	Coverage Area (Kattha)	Amount (kg) grown per year	Unit selling price in NPR/kg
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Cost details of **potential crops after solar water pump intervention – preferably cash crops (vegetables, cardamom, tea, coffee etc.).** This is just to gauge the community's understanding and awareness of crop potential on their land.

Cash crop name	Coverage Area (Kattha)	Anticipated harvest in the respective coverage area (Kg)	Anticipated selling price in NPR/kg
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Land information	
The total size of land to be irrigated *Mention the unit of measurement correctly.*	Area: ……. Unit: …….*(bigha, kattha, ropani, ana etc.)*

Is the entire land privately owned?	☐ Yes ☐ No If yes, how many owners? …….. If no, describe ownership: ……..... ……
If the land is leased:	Lease tenure: …… Detail out lease terms: ……

Water information	
Water requirement per day *(if known, otherwise, must calculate it by the irrigation requirement)*	……. ltrs/day
Name of the water source	
Type of water source	☐ Bore-well ☐ Open-well ☐ Canal ☐ River ☐ Pond ☐ Others: ……
Describe the physical location of the water source	
Water source ownership	☐ Public ☐ Private If private, is the owner willing to share the water source for pumping? ☐ Yes ☐ No Any concerns?...……....
GPS location of water source i.e. pump intake	Latitude: ……... Longitude: ……
If river pumping, is the pump intake location at risk of flood damage during monsoon?	☐ Yes ☐ No If yes, discard pump intake location or mention mitigation strategy: …… ……

If river pumping, will there be adequate water level in the pump intake throughout the year?	☐ Yes ☐ No If no, discard pump intake location or mention mitigation strategy:
If river pumping, what is the distance between the river and sump well?	
If bore-well, what is the diameter of the bore-well (inches)?	Diameter of the bore-well (inches): …… The total depth of the bore-well: …… ☐ ft ☐ meter The static water level of the bore-well: …… ☐ ft ☐ meter Describe how the static water level is measured: ……..
If open-well, what is the depth of the bore-well (meters)?	Diameter of the open-well: …… ☐ ft ☐ meter The total depth of the open-well: …… ☐ ft ☐ meter The static water level of the open-well: …… ☐ ft ☐ meter Describe how the static water level is measured: ……..
If canal or stream, what is the water flow rate?	……ltrs/min Describe measuring method: ☐ Bucket measurement ☐ Others: …….
Any risks of water source drying?	☐ No, consistent year-round ☐ Yes, drying in certain months If risk of drying, mention which months:….
Any risks of water source depletion (inadequate for pumping)?	☐ No, consistent year-round ☐ Yes, low water in certain months If the risk of depletion, mention which months:……..
Describe the quality of water *(clear/murky/sandy etc.)*	
The existing water-pumping mechanism	
What is the current mechanism for irrigation?	☐ Rainwater ☐ Canal ☐ Diesel pumps ☐ Electric pumps ☐ Handpump ☐ None ☐ Others: …….
What is the limiting factor of the current mechanism for irrigation that justifies the intervention of a solar water pump?	

If an electric pump is also used, what is the reason for pursuing a solar water pump?	
If a diesel pump is used, what is the size of the pump?	…….. ☐ HP ☐ kW
What is the fuel consumption per hour?	
Usage hour of the pump per day?	
How many days per week is the pump used?	
Cost (per litre) of diesel in the location?	

Solar panel location	
Land ownership type	☐ Private ☐ Public ☐ Others: ……..
Is the concerned owner willing to allocate the land for solar array installation?	☐ Yes ☐ No Any concerns?....…….....
GPS location of solar array location	Latitude: ……... Longitude: ……
Area available for panel installation	…….. sq.m
Topography type	☐ Flat ☐ Slope ☐ Uneven
If the land is sloped, what is the direction and degree of the slope?	The direction of slope:…….. *(north/south/east-west etc.)* Slope degrees: ……..
Are there any nearby obstacles that may cause shading in the panels? Describe. *Trees, buildings, electric poles etc.*	☐ Yes ☐ No Describe:....……..... ..... ……
Is the site prone to high lightning risks?	☐ Yes ☐ No
Controller	
Location for controller	☐ Outside (mount in the solar array structure) ☐ Outside (any other location) ☐ Inside (nearby building)

	☐ Describe controller location: ……
Ground distance from controller to solar array	…….. m
Collection tank (pump intake)	
Is there an existing collection tank?	☐ Yes ☐ No If yes, capacity: ……. ☐ litres ☐ m^3 Tank structure *(concrete, HDPE etc.)*: …….....
GPS location of existing collection tank	Latitude: …… Longitude: ……
If a collection tank is to be constructed, is there land available?	☐ Yes ☐ No If yes, land ownership type: ☐ Private ☐ Public ☐ Others: ……..
What type of collection tank is planned to be constructed? *(concrete, HDPE etc.)*	
GPS location of the new collection tank	Latitude: …… Longitude: ……

Distribution tank (for water storage and distribution)	
Is there an existing distribution tank?	☐ Yes ☐ No If yes, capacity: ……. ☐ litres ☐ m^3 Tank structure *(concrete, HDPE etc.)*: …….....
GPS location of existing distribution tank	Latitude: …… Longitude: ……
If a distribution tank is to be constructed, is there land available?	☐ Yes ☐ No If yes, land ownership type: ☐ Private ☐ Public ☐ Others: ……..

	Is the concerned owner willing to allocate the land for solar array installation? ☐ Yes ☐ No Any concerns?....……..... .....
What type of distribution tank is planned to be constructed? *(concrete, HDPE etc.)*	
GPS location of the new distribution tank	Latitude: …… Longitude: ……

System head	
Vertical height from the pump intake to the highest distribution point measured on site?	Mention the vertical height: ……m Describe how the vertical height is measured. ☐ Google Earth (less accurate) ☐ Others: ……..

Transmission and distribution pipes	
How is the water distribution planned?	☐ Open canal flow ☐ Distribution pipe ☐ Others: ……
Are there existing distribution pipes?	☐ Yes ☐ No If yes, does the existing distribution pipe cover the entire catchment area? ☐ Yes ☐ No If no, how much land area does it cover?……. Mention the diameters of the distribution pipes: Main pipe: …….. inches Branch pipes: …….. inches Type of pipe material *(GI, HDPE etc.)*: ……..

Ground distance of transmission pipe from the pumping area to the distribution tank	…….. m
Ground distance from the distribution tank to the nearest land area to be irrigated	…….. m

Grid information	
Estimated distance of the national grid from the project location	…….. m
Estimate timeline when the grid will be available in the project location	☐ No plans ☐ Soon If soon, by when? …….

Additional information	
Remarks (any other relevant information)	