

Beneficiary Prioritization Guidelines

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This document illustrates the beneficiary prioritization criteria useful for beneficiary selection process in PoCRA Micro planning exercise. The beneficiary selection process in PoCRA consists of gathering of individual demands from project village and then approving the demands at three levels starting from VCRMC Committee, followed by Technical Approval by Agricultural Assistant and Pre-sanction by Sub Division Agricultural Officer. The PoCRA Guidelines Manual delineates preliminary criteria for selection of beneficiaries with the primary criteria being prioritized selection of small and marginal farmers with no access to protective irrigation. This is to move towards the objective of climate resilience for such small holding farming systems.

This document provides an analysis of 2 villages conducted based on primary survey carried out in the village. The farmer background based on proxies for various bio-physical and socio-economic parameters is analysed to determine the prioritization criteria for different individual benefits provided under PoCRA. Such as wells, farm pond, horticulture, drip/sprinkler, polyhouse, polytunnel, sericulture etc. The beneficiary selection is to be done on the basis of elimination based on certain requirements and prioritization based on certain parameters. For different kinds of individual benefits the requirements and the parameters to be considered are different. The parameters studied for deciding the criteria includes:

Id	Criteria	Current Data source	Problems with current data source	Proposed data sources
1	Land Area	DBT based on form 8A	Total land column in many villages missing in DBT. Land area currently filled only for 1 gat no. according to 7/12	Total land as per form 8A to be used- Farmer beneficiary form / 8A list for each village
2	Stream proximity	Not collected		Farmer beneficiary form
3	Household size	Not collected		Farmer beneficiary form
4	Salaried members in the immediate family	Not collected		Farmer beneficiary form

5	Biophysical vulnerability	Available but not used	Gat number issues in cadastral shapefile - repeated/null/mismatch with updated ones	Computed for every cadastral number from QGIS water balance plugin
6	Water assets	Farmer beneficiary form	Inadequate data collected and not present on DBT portal	Farmer beneficiary form
7	Cropping pattern	Farmer beneficiary form	Inadequate data collected and not present on DBT portal	Farmer beneficiary form
8	Migration	Not collected		Farmer beneficiary form
9	Labour work	Not collected		Farmer beneficiary form
10	Allied business	Not collected		Farmer beneficiary form

In these basic parameters different yes/ no questions and their responses can be used to categorize beneficiaries for different kind of benefits which can be availed from the scheme. The responses can be used to provide a rating in each section and their sum can be used to identify and group beneficiaries.

The different benefits that can be availed through the scheme can be categorised into 3 types:

- 1) **Demand side:** These benefits look to change the farmer demand for water by changing the cropping patterns. The benefits which fall in this category are: Horticulture, Sericulture, Tree Plantation, Shade-net, Polyhouse, Polytunnel.
- 2) **Supply side:** These benefits look at providing water to the farmers. The benefits which fall in this category include well, well rehabilitation, farm pond, lining of farm pond, drip irrigation, sprinkler irrigation, electric/ diesel pumps, pipes, compartment bunding.
- 3) **Livelihood alternatives:** These benefits provide a non agriculture based livelihood support primarily to landless farmers. The benefits which fall in this category are Poultry, sheep rearing, apiary, fishery, vermicompost.

For this document, we will focus on demand and supply side benefits only.

The different questions to be asked based on the above categories and the rankings and priorities to be given are mentioned in the table below.

Id	Category	Questions	Demand side benefits priority		Supply side benefits priority	
			Yes- 0	No- 1	Yes- eliminated	No- considered
1	Land Area	1A) Is the land area available more than the reference value of the land area in the village?	Yes- 0	No- 1	Yes- eliminated	No- considered
			Demand side benefits like horticulture, polyhouse, sericulture requires high investments and also carry considerable risk. Thus while priority can be given to small and marginal farmers, other farmers can also be included as beneficiaries as they are the ones who can carry this risk.		This can be considered as an elimination criteria for supply side benefits.	
2	Stream proximity	2A) Is there a stream within 100 m from your farm?	Yes-0	No- 1	Yes- 0	No- 1
			Stream near the farm provides a great advantage through better soils, better water access etc.		Stream near the farm provides a great advantage through better soils, better water access etc.	
3	Household size	3A) Is your household size more than 4?	Yes- 1	No- 0	Yes- 0	No -1
			For horticulture crops, polyhouse etc. larger household sizes are beneficial. These cropping pattern changes come with greater amount of work. Because the risk associated with the crops is high it is important to consider households with higher household size to reduce risks associated with animal attacks, pest and also added work.		The vulnerability for smaller households is greater and thus smaller households should be given a priority in beneficiary selection.	

4	No. of salaried members	4A) Is there a salaried member in your immediate family?	Yes- 1	No- 0	Yes- 0	No- 1
			Having a secondary stable income makes it easier to manage the risk associated with horticulture crops.		The absence of a salaried member in the immediate family increases the vulnerability and dependence on agriculture. Thus families without a salaried member should be given the priority.	
5	Biophysical vulnerability	5A) This parameter will be precomputed for all the cadastral numbers in the village for a reference crop soybean. This will be made available from the plugin	Deficit< 100 mm- 1	Deficit> 100 mm -0	Deficit< 100 mm- 0	Deficit> 100 mm -1
			Farmers with cadastral numbers having a deficit less than 100 mm for Soybean crop should be given priority. For farmers with land in more than 1 cadastral numbers, the cadastral number with the larger area should be considered.		Farmers with cadastral numbers having a deficit more than 100 mm for Soybean crop should be given priority. For farmers with land in more than 1 cadastral numbers, the cadastral number with the larger area should be considered.	
6	Water Assets	6A) Do you have a well / borewell / farm pond or any other irrigation source on your land? 6B) Is the well/ borewell/ farm pond functioning? 6C) Does any one of your water source have water available for irrigation after the month of January?	Yes- 1	No- 0	Yes- 0	No- 1
			(elimination criteria)		(elimination criteria for well)	
			Yes- 1	No- 0	Yes- 0	No- 1
			Yes- 1	No- 0	Yes- 0	No- 1
			It is necessary to have a water source which lasts throughout the year for horticulture crops.		Priority for farmers without any water source needs to be provided.	
7		7A) Do you cultivate an annual crop?	Yes- 0	No-1	Yes- 0	No-1

	Cropping pattern	7B) Do you cultivate a rabbi crop? 7C) Do you provide irrigation to your kharif crop?	Yes- 1 No-0	Yes-0 No-1
			Yes-1 No-0	Yes- 0 No-1
			It is necessary to understand whether the farmer can provide irrigation to his/ her existing cropping pattern. Farmers with rabbi crop should be preferred as they can provide water upto the months of Jan.	Priority needs to be given to rainfed kharif farmers for asset creation.
8	Migration	8A) Do you migrate for more than 3 months in the year?	Yes-1 No- 0	Yes-1 No- 0
			Priority needs to be given to families migrating for work.	Priority needs to be given to families migrating for work.
9	Labour work	9A) Do you engage in labour work in the village for more than 3 months?	Yes-1 No- 0	Yes-1 No- 0
			Priority needs to be given to farmers dependent on labour work.	Priority needs to be given to farmers dependent on labour work.
10	Allied business	10A) Do any of your immediate family members engage in any allied business?	Yes-0 No- 1	Yes-0 No- 1
			Priority needs to be given to farmers not involved in any allied businesses.	Priority needs to be given to farmers not involved in any allied businesses.

A number can be allocated for each farmer based on these two methods. The priority list will then be set on a descending scale. The highest number will receive the first priority. For different assets different combinations of these indicators will be used.

Category	Benefit	Elimination criteria	Prioritization formula	Relevance
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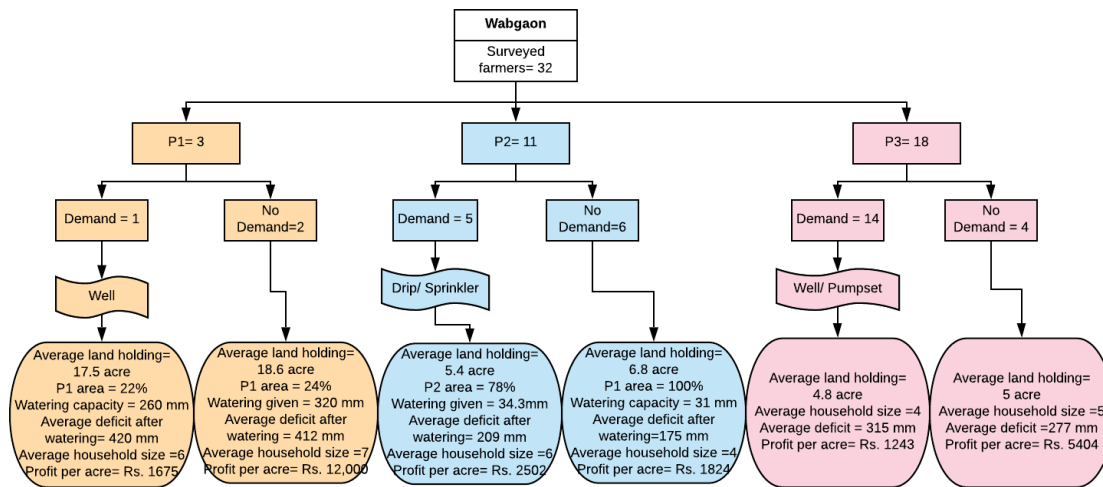
Demand side benefits	Horticulture	6A+6B	1A+2A+3A+4A+5A+6C+7A+7B+7C+8A+9A+10A	The elimination criteria considered eliminates farmers without a water source and further prioritizes farmers with water for longer durations. The prioritization formula is in accordance with the demand side benefits.
	Sericulture	6A+6B	1A+2A+3A+4A+5A+6C+7A+7B+7C+8A+9A+10A	The elimination criteria considered eliminates farmers without a water source and further prioritizes farmers with water for longer durations. The prioritization formula is in accordance with the demand side benefits.
	Tree plantation		1A+2A+8A+9A+10A	Tree plantation benefit under PoCRA mainly consists of trees alongside the farms. These include local tree varieties in the region which do not require any specific watering. Farmers generally provide watering to such trees rarely and if they do, household water supply or irrigation methods used primarily for other crops are generally used. These trees thus do not require the presence of a water source or lesser bio-physical vulnerability.
	Shade-net	6A+6B	1A+2A+3A+5A+6C+7A+7B+7C+8A+9A+10A	Shade-net requires the farmer to have a water source. Shade-net helps reduce the risks associated with crops relatively and also provides an income soon after investment.
	Polyhouse / Polytunnel	6A+6B	1A+2A+3A+5A+6C+7A+7B+7C+8A+9A+10A	Polyhouse/ polytunnel requires the farmer to have a water source. Polyhouse/ polytunnel helps reduce the risks associated with crops relatively and also provides an income soon after investment.
	Supply side benefits	Well	1A+6A	2A+3A+4A+5A+7B+8A+9A+10A
Well rehabilitation		1A+6A(Yes)+6B	2A(yes-1)+3A+4A+5A+6C+7B+7C+8A+9A+10A	Well rehabilitation should be provided to farmers with a well which is currently not functioning with/ without any other source of irrigation with priority given to the farmers without any source of irrigation.
Farm pond (Run-off based)		1A	2A+3A+4A+5A+6A+6B+7A+7B+7C+8A+9A	Farm ponds based on run-off should be provided preferably to farmers near streams.

			A+10A	
	Groundwater based farm pond	1A+ 6A (Yes)+ 6B (Yes)	2A+3A+4A+5A+6C+7A+7B+7C+8A+9A+10A	Farm ponds based on ground water should be provided to farmers with limited GW resources temporally.
	Lining of farm ponds	1A+ 6A(farm pond)	2A+3A+4A+5A+6A+7A+7B+7C+8A+9A+10A	Lining of farm ponds should be provided to farmers already having farm ponds.
	Drip/ Sprinkler irrigation	1A+ 6A	2A+3A+4A+5A+6B+6C+7A+7B+7C+8A+9A+10A	
	Electric/ Diesel Pumps/ Pipes	1A+ 6A	2A+3A+4A+5A+6B+6C+7A+7B+7C+8A+9A+10A	
	Compartment bunding	1A	2A+3A+4A+5A+6A+6B+6C+7A+7B+7C+8A+9A+10A	

Based on these formulae, a number computed for different demand side and supply side benefits can be computed. Farmers with a higher number will be given a higher priority while choosing beneficiaries.

Case study: Wabgaon, Wardha

Considering the case for Wabgaon village, the current status of the village in based on primary survey of 32 farmers is



It can be seen that maximum applications are from P3 farmers for well/ pumpset. The farmers with no applications amongst P3 are seen to have a lower deficit amongst the P3 farmers. The P2 farmers have applied for drip/ sprinkler. The average landholding is seen to be above 5 acres amongst the farmers applying for the benefit however, the farmers not submitting any demands have a higher average landholding size than the ones applying for the demand. The mismatch between the land details present in the DBT and the land details as per primary survey is because in most places the total land area has not been filled. Land detail information as per 7/12 is present in the DBT.

These collected samples were further analysed on the basis of the criteria selected. The table below shows the data collected for the farmers in Wabgaon.

Farmer name	Demand side interventions														Supply side interventions														
	1A	2A	3A	4A	5A	6A	6B	6C	7A	7B	7C	8A	9A	10A	1A	2A	3A	4A	5A	6A	6B	6C	7A	7B	7C	8A	9A	10A	
Lotkar	0	0	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	1	1	1	1	1	0	1	1	1	0	
Purshottam Paradpure	0	0	1	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	1	1	1	1	0	1	1	0	0	
Rupesh Shelke	1	0	1	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	1	1	1	0	1	0	1	0	
Vasanta Bhade	1	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0
Prabhawati Wavre	0	1	0	0	1	0	0	0	1	0	0	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0
Shalikam Shelke	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	0	0	0	
Pramod Bale	0	1	1	0	1	1	1	1	1	0	1	0	1	0	1	1	0	1	0	0	0	0	0	1	1	0	0	1	0
Chandrakan t Nehare	0	0	0	0	1	0	0	0	1	1	0	1	1	0	1	0	1	1	0	1	1	1	1	1	0	1	1	1	0
Ishwar Vishwanath	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0
Sudhakarra o Khurmule	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0
Ujjwala Narayane	0	0	0	0	0	1	1	0	1	0	1	0	1	0	1	0	1	1	1	0	0	1	1	1	0	0	1	0	
Haridas Raut	0	0	1	1	0	0	0	0	1	0	0	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0
Kisan Paratpure	0	1	1	0	0	0	0	0	1	0	0	0	1	0	1	1	0	1	1	1	1	1	1	1	1	0	1	0	
Vandu Khusate	0	1	1	0	0	1	1	0	1	1	1	0	0	0	1	1	0	1	1	0	0	1	1	0	0	0	0	0	
Madhukar Shelke	0	1	1	1	0	0	0	0	1	0	0	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0
Shevantabai Paratpure	0	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	0	1	0	1	1	1	1	1	1	0	0	0	
Sahebrao Hore	0	1	1	0	0	0	0	0	1	0	0	0	1	0	1	1	0	1	1	1	1	1	1	1	1	0	1	0	
Suman Lokhande	0	1	1	0	0	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	1	0	0	1	0	

Kalpna Lokhande	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	0	0	1	1	0	
Madhukar Bobade	0	1	1	0	0	0	0	0	1	0	0	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0
Dilip Lotkar	0	0	0	0	1	1	1	0	1	1	1	0	1	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0+	+	
Bharat Shidulkar	1	0	1	0	0	1	1	0	1	1	1	1	1	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	
Haribhau Umbre	1	1	0	0	1	1	1	0	1	1	1	1	1	0	0	1	1	1	0	0	0	1	1	0	0	1	1	0	0	
Narayan Paratpure	0	0	1	0	1	0	0	0	1	0	0	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0	
Lilabai Rajurkar	1	1	1	0	0	1	1	0	1	1	1	0	0	0	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0	
Ramesh Debade	1	0	1	0	0	1	1	0	1	0	1	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	1	0	0	
Vanabai Tolase	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	
Savjyoti Dabhire	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	
Haridas Hande	1	0	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	
Prashant Bhade	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	
Mangesh thote	1	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	
Dhananjay Didphay	1	0	1	0	0	1	1	0	1	1	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1	

Based on the above data and the formulae for different interventions the computed index for different interventions is as shown in the table below.

Farmer name	Demand side		Supply side				
	Horticulture/ Sericulture/ shade-net/ Polyhouse	Tree plantation	Well	Well rehabilitation	FP Run-off based	GW based FP	Drip/ Sprinkler irrigation/ pumps/ pipes/ CB
Lotkar	0	2	4	4	7	0	0
Purshottam Paratpure	0	1	3	3	6	6	6
Rupesh Shelke	0	2	1	1	4	0	0

Vasanta Bhade	0	3	3	3	6	0	0
Prabhawati Wavre	0	2	5	5	8	8	8
Shalikam Shelke	0	1	4	4	7	7	7
Pramod Bale	7	2	0	0	0	0	0
Chandrakant Nehare	0	2	4	4	7	7	7
Ishwar Vishwanath	0	2	6	6	9	9	9
Sudhakar Rao Khurmule	0	1	5	5	8	8	8
Ujjwala Narayane	3	1	0	0	0	0	0
Haridas Raut	0	2	4	4	7	7	7
Kisan Paratpure	0	2	5	5	8	8	8
Vandu Khusate	5	1	0	0	0	0	0
Madhukar Shelke	0	3	5	5	8	8	8
Shevantabai Paratpure	0	1	3	3	6	6	6
Sahebrao Hore	0	2	5	5	8	8	8
Suman Lokhande	8	3	0	0	0	0	0
Kalpana Lokhande	7	2	0	0	0	0	0
Madhukar Bobade	0	2	5	5	8	8	8
Dilip Lotkar	5	1	0	0	0	0	0
Bharat Shidulkar	7	3	0	0	0	0	0
Haribhau Umbre	8	4	0	0	0	0	0
Narayan Paratpure	0	2	4	4	7	7	7
Lilabai Rajurkar	6	2	0	0	0	0	0
Ramesh Debade	5	2	0	0	0	0	0
Vanabai Tolase	0	1	4	4	7	7	7
Savjyoti Dabhire	3	1	0	0	0	0	0
Haridas Hande	6	1	0	0	0	0	0
Prashant Bhade	3	1	0	0	0	0	0
Mangesh thote	4	1	0	0	0	0	0
Dhananjay Didphay	6	2	0	0	0	0	0

Demand side beneficiary priority ranking

The priority ranking for horticulture, sericulture, polyhouse, polytunnel is shown in the table below. We can see there are fewer farmers eligible for this benefit and are distinctly different from farmers eligible for supply side benefit.

Farmer Name	Index	Priority rank
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Suman Lokhande	8	1
Haribhau Umbre	8	1
Pramod Bale	7	2
Kalpana Lokhande	7	2
Bharat Shidulkar	7	2
Lilabai Rajurkar	6	3
Haridas Hande	6	3
Dhananjay Didphay	6	3
Vandu Khusate	5	4
Dilip Lotkar	5	4
Ramesh Debade	5	4
Mangesh thote	4	5
Ujjwala Narayane	3	6
Savjyoti Dabhire	3	6
Prashant Bhade	3	6

For farmers with same priority rank, benefits can be given as per to those applying for which benefit and beyond that alphabetically.

The priority ranking for tree plantation is shown in the table below. We can see since there isn't an elimination criteria in this category, all farmers are eligible for tree plantation however the ranking varies.

Farmer name	Tree plantation	Priority rank
Haribhau Umbre	4	1
Bharat Shidulkar	3	2
Madhukar Shelke	3	2
Suman Lokhande	3	2
Vasanta Bhade	3	2
Chandrakant Nehare	2	3
Dhananjay Didphay	2	3
Haridas Raut	2	3
Ishwar Vishwanath	2	3

Kalpana Lokhande	2	3
Kisan Paratpure	2	3
Lilabai Rajurkar	2	3
Lotkar	2	3
Madhukar Bobade	2	3
Narayan Paratpure	2	3
Prabhawati Wavre	2	3
Pramod Bale	2	3
Ramesh Debade	2	3
Rupesh Shelke	2	3
Sahebrao Hore	2	3
Dilip Lotkar	1	4
Haridas Hande	1	4
Mangesh thote	1	4
Prashant Bhade	1	4
Purshottam Paradpure	1	4
Savjyoti Dabhire	1	4
Shalikam Shelke	1	4
Shevantabai Paratpure	1	4
Sudhakarrao Khurmule	1	4
Ujjwala Narayane	1	4
Vanabai Tolase	1	4
Vandu Khusate	1	4

Supply side beneficiary priority ranking

The priority ranking for supply side benefits is much different than that for demand side benefits. The priority ranking for wells is shown in the table below. For choosing beneficiaries for wells, this can be used alongside GSDA permissions.

Farmer name	Well	Priority rank
Ishwar Vishwanath	6	1
Madhukar Shelke	5	2
Kisan Paratpure	5	2
Madhukar Bobade	5	2
Prabhawati Wavre	5	2
Sahebrao Hore	5	2
Sudhakar Rao Khurmule	5	2
Chandrakant Nehare	4	3
Haridas Raut	4	3
Lotkar	4	3
Narayan Paratpure	4	3
Shalikam Shelke	4	3
Vanabai Tolase	4	3
Vasanta Bhade	3	4
Purshottam Paratpure	3	4
Shevantabai Paratpure	3	4
Rupesh Shelke	1	5

The priority ranking for well rehabilitation makes it necessary for the farmer to possess a well which is not functioning. The survey sample collected in Wabgaon did not have any farmer with these specifications and thus a priority ranking list was not made.

The priority ranking for farm ponds based on run-off according to this formula is shown in the table below.

Farmer name	FP RO based	Priority rank
Ishwar Vishwanath	9	1
Madhukar Shelke	8	2

Kisan Paratpure	8	2
Madhukar Bobade	8	2
Prabhawati Wavre	8	2
Sahebrao Hore	8	2
Sudhakarrrao Khurmule	8	2
Chandrakant Nehare	7	3
Haridas Raut	7	3
Lotkar	7	3
Narayan Paratpure	7	3
Shalikam Shelke	7	3
Vanabai Tolase	7	3
Vasanta Bhade	6	4
Purshottam Paradpure	6	4
Shevantabai Paratpure	6	4
Rupesh Shelke	4	5

Based on the formula mentioned above and the calculations the priority ranking for drip/ sprinkler irrigation/ pumps/ pipes/ compartment bunding, ground water based farm pond are depicted in the table below.

Farmer name	Drip/ Sprinkler irrigation/ pumps/ pipes/ cb	Priority rank
Ishwar Vishwanath	9	1
Madhukar Shelke	8	2
Kisan Paratpure	8	2
Madhukar Bobade	8	2
Prabhawati Wavre	8	2
Sahebrao Hore	8	2
Sudhakarrrao Khurmule	8	2
Chandrakant Nehare	7	3

Haridas Raut	7	3
Narayan Paratpure	7	3
Shalikam Shelke	7	3
Vanabai Tolase	7	3
Lotkar	7	3
Purshottam Paradpure	6	4
Shevantabai Paratpure	6	4
Vasanta Bhade	6	4
Rupesh Shelke	4	5

Beneficiary prioritization is important to ensure that the scheme reaches the intended beneficiaries. In this analysis the demands submitted are based on primary survey. These demands do not match the list available on the DBT portal. This is due to mismatch between gat no.s or the status of the remaining farmers has not been uploaded on the DBT portal.

If the demands are collected with above required information for all farmers during microplanning exercise and a automated analysis framework is built to give intervention wise priority list through MLP app. This can be submitted to VCRMC at the end of MLP for first stage of approval, so that it is ensured that targeted farmers get selected as beneficiaries based on priority list.