



SYMBIOSIS SCHOOL OF ECONOMICS



**NATIONAL BANK FOR
AGRICULTURE AND RURAL
DEVELOPMENT**

Impact Evaluation of Tribal Development Fund

A study of Selected Villages in Junnar –I, Pune

Impact evaluation carried out by: Symbiosis School of Economics, Pune

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Dr. Debdulal Thakur, Dr. Deepa Gupta, Dr. Varun Miglani

Forward

The *multi-dimensional poverty index* (MPI) developed by Alkire and Foster (2011)¹ is presently regarded as one of the important tools to measure Sustainable Development Goal (1), to end poverty in all forms and dimensions. The global MPI scrutinizes a person's deprivations across 10 indicators in health, which encompasses (i) nutrition and (ii) child mortality - education including (iii) years of schooling (iv) school attendance and standard of living with indicators such as (v) cooking fuel (vi) sanitation (vii) drinking water (viii) electricity (ix) housing (x) assets.

In 2019, India and Cambodia reduced their MPI values the fastest. As India inches towards 75 years of independence in 2022, it is imperative for the different societal stakeholders, like Symbiosis School of Economics (SSE) - a leading academic institution, to undertake studies to assess whether the grass root / bottom of the pyramid, of the economy are being included in the oft stated '*inclusive development*' agenda of the country.

A slice of this perspective has been examined in the study undertaken by SSE, titled, "Impact Evaluation of Tribal Development Fund: A Study of Selected Villages in Junnar – Pune". The study, includes the intervention through the Tribal Development Fund (TDF) of National Bank for Agriculture and Rural Development (NABARD) by involving Lupin Human Welfare & Research Foundation (LHWRF) in the various villages of Junnar to enhance the livelihood of the villagers.

The study assess and evaluate the wadi project (creation of a small orchard) to improve livelihoods of the households, over a period of five years. The study focuses on the marginalized tribals in Junnar, by selecting 12 villages and 114 households. It revealed that the present-day challenges faced by the tribals included – lack of resources for using improved seeds, fertilizers, etc., lack of awareness of improved production technologies, degrading natural resources and negligible efforts to revive the natural resources, lack of irrigation facilities – specially in the post khariff season and water constraints (for the purpose of drinking and sanitation) being the biggest impediment in the living conditions of the villagers. A combination of these factors has compelled the villagers to adopt alternative livelihood opportunities (even outside the villages), changes in dietary pattern on account of deforestation, which has negatively impacted their health.

The villagers from a naked eye perspective – faced substantial levels of deprivations which are indicative that households have failed to make the cut-off mark on the various indicators of the MPI. Therefore, while India improves on MPI – the select regions of India, as undertaken in the present study, reveals a high degree of MPI – deprivations and prevalence of inequalities. Further, the 2018 MPI for India, for a period of (2006-2016) – reveals that, while the MPI has gone down substantially across communities, OBC (59.8%), SC (57.1%), but it was the lowest for ST (48.8%).

Tribal India as per the 2011 Census, constitutes 104.5 million, (8.63%) of the total population, while they comprise 10.5 million (9.35%) for the state of Maharashtra, and at the Pune district level, tribals

¹ The Multidimensional Poverty Index(MPI) was jointly developed by United Nations Development Programme (UNDP) and Oxford Poverty Human Development initiative(OPHI) at the University of Oxford.

account for 3.49 lakh (3.7%) of its total population. Indeed, if the SDGs are to succeed by 2030, India will have to rapidly progress on various targets and indicators. Given the backdrop of the present study, it is important to undertake multi-stakeholders studies to ensure inclusive growth which will provide crucial recommendations to alleviate the conditions of the persons at the bottom of the pyramid, leaving no one behind.

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1.1. *Background*

1. The National Bank for Agriculture and Rural Development (NABARD) has been supporting tribal development through concessional rates of refinance, separate line of credit to agencies supporting tribal families, promotional activities, etc. However, a key concern for NABARD has been the sustainability of tribal livelihoods.
2. Based on the successful experience of Adivasi Development Programmes, NABARD embarked upon an ambitious program of replicating the 'wadi' (meaning a small orchard of one or two acre with multiple crops) model across the country. In this direction, Tribal Development Fund (TDF) was created by NABARD with initial corpus of Rs. 50 crore, out of its profits for the year 2003-04. The Fund has grown over the years and the credit balance as on 31 March 2019 was Rs. 1184 crore. The projects under TDF are implemented by partnering with State Governments, Krishi Vigyan Kendras (KVKs), NGOs and corporates. A comprehensive tribal development programme having small orchard as the core component (wadi) is being implemented for improving the livelihood of tribal population.
3. TDF was set up by NABARD to create replicable models of integrated development of tribal families, on participatory basis, through adoption of sustainable income generating activities based on potential of the area and the tribal needs. The fund also aimed to build and strengthen tribal institutions, which would enable the communities to be partners in policy formulation, execution of programs and improve social and economic status; and build and strengthen producers' organizations.
4. Needless to mention that NABARD has been closely associated with tribal development and sustainable livelihoods through orchard based farming systems. As an integral component of NABARD's Natural Resource Management (NRM) policy of providing sustainable livelihoods, NABARD laid special emphasis on providing support for holistic development of tribal communities with orchard establishment as the core element.
5. As a part of the aforementioned initiative, the Farm Sector Development Department (FSDD) of NABARD (Pune office) initiated the 'wadi project' and it was implemented by Non-

Governmental Organizations (NGOs) over period of 6-7 years and the project interventions consisted of orchard based farming system for 500 to 1000 families coupled with water resources development, soil conservation, in maximum 1 acre land parcel. The project also included livelihood interventions for land less families (upto 10%), women development, health and sanitation, etc.

6. The current study focusses on the Junnar block falling under Pune district and the 'wadi project' was implemented by the Lupin Human Welfare & Research Foundation (LHWRF). The study villages are located at the base of Sahyandri hills, situated 100km east to Mumbai and 94 km north of Pune. Junnar is adjoining Ambegaon block with patches of dense tribal populations, especially the 'Mahadev Koli in its western region. The place is known for its wells and dams. Crops like Bajara and Rice and vegetables like Tomato, Potato and Onion are grown in areas receiving irrigation facilities. Few also engage themselves growing grape gardens and flower gardens. The average proportion of tribal population in the study villages (refer to **Table 3**) is 90% of the total population in the said block.
7. As per the 'Detailed Project Report' (DPR) submitted by Lupin Human Welfare & Research Foundation (LHWRF) to NABARD, the total landmass (10070 Ha) is divided into either plains or sub-mountains. It must be noted that the study villages lie in the sub-mountain regions of Junnar. In this kind of topography around 55 % of the landmass are under cultivation and around 14 % is cultivable wasteland. The project aimed to convert this wasteland into productive orchards. Here, most of the cultivation happen during the monsoon (June to September). Therefore, rainfall plays an important role in the life and livelihood of the villagers. The average annual rainfall in the plains is around 750 to 1000 mm, while the average annual rainfall in the sub-ghats is around 1700 to 2500 mm.

1.2. *The Concern*

1. The major tribes dwelling in the area are 'Mahadeo Koli'. Earlier these tribes were dependent on the forests for meeting their food and shelter requirements. The rapid destruction of the forests has forced them to adopt alternative livelihood options, which mainly includes

agriculture and migratory labour. Earlier the general food of the tribal community consisted of a variety of vegetables and fruits, which were available in the forests. As the forests have been rapidly vanishing the diet of these communities mainly consists of rice and bajara with a few pulses. This change in dietary pattern led to several health issues, mainly for the females.

2. Even as on date the major source of livelihoods for the community is based on agriculture. When the project was conceived the production from agriculture was so less that it was not sufficient for the entire year. Rice is the main crop cultivated in the area, cultivated only during the Khariff. Local varieties of rice cultivated in the area are Dhaul, tambakadi, and Halava. Some new varieties introduced in the area are Kolam and Punam. Due to the absence of Rabi crops the agricultural production (mainly rice) is anyway lopsided and the agriculture production is quite low in the area amounting to around 1200 to 1500 KG per ha. The production of Nachani is around 700 KG per ha. NABARD along with LHWRP identified few reasons for such poor productivity while the 'wadi project' was conceived for these areas. They mainly attributed to three factors:

- Lack of resources for using improved seeds, fertilizers, etc.
- Lack of awareness of improved production technologies
- Degrading natural resources and negligible efforts to revive the natural resources.
- Lack of facilities for irrigation

3. Further given the topography, out of the total land owned by the villagers, around 40% is plane land where paddy cultivation is practiced, while the remaining is along slopes which is underutilized or may be used for cultivating Nachani.
4. It can be noted that though the sample villages are located in the catchment areas of several rivers, facilities for irrigation are largely lacking in the area. The area receives almost 2000 mm average rainfall annually, however most of the water is lost downstream. A Few small facilities like wells and streams exist in the villages, however most of them dry-up during the post monsoon months. Proportion of farmers / area under second crops is hence negligible. Around 15 to 25 % farmers cultivate gram or wheat on small patches of land during Rabi season.

5. Given the insufficiency and constraints to run their livelihood, villagers are forced to look for alternative livelihood opportunities outside the village. The families migrate to Ottur, Junnar and Narayangaon where many of them work as agricultural labourers on grape farms and vegetable plots (especially onion and banana plots). Some also migrate to urban areas including Pune and Mumbai as construction labourers. The temporary and seasonal migration² was quite common for one or two members from each family in search of alternative livelihood. Cases were registered where the entire family migrates for about four to five times in a year. The period of migration may vary from fifteen days to a month during each migration. The earnings from migration was very meager and part of the earnings goes to the employee contractors. The average income earned from migration is Rs. 10,000-12000 per annum. Needless to mention, the availability of such opportunities are not reliable enough and at times the families had to stay hungry. The situation of landless families was even more critical, as non-farm based livelihood opportunities are even less.
6. Several commonly occurring health problems in the area are anemia (more prominent among women), Skin diseases like scabies and water borne diseases. The less common but important illnesses include malaria, jaundice, typhoid and tuberculosis. One of the very common problems mainly in case of women is joint pain mainly caused due to calcium deficiency and stress caused by continues physical labour in paddy fields essentially during transplantation. The Primary Health Centre's (PHC's) are mainly involved in providing curative services while the awareness level on prevention of diseases and illnesses is very low.
7. Women are amongst the most disadvantaged section of the community in the area. They have to undergo great hardships on daily basis for collection of fuel wood, fodder and drinking water. They are also involved in laborious activities in agriculture like transplantation of paddy and harvesting. In addition to the daily chores they also work hard (involving migration) for providing livelihood support to the families. Their problems are further intensified due to poor nutrition, disregard to their health issues and poor living conditions.

² Temporary migration, often used interchangeably with circular, season-al, short-term and spontaneous migration, has been a subject of much dis-course. It is a sort of mobility where the economic activity of a person is moved but not the usual residence.

8. In **Table 1** and **Table 2** we provide the overall status of the TDF project as on 31st March 2019.

Here we provide both the consolidated figures as well as the state-wise break-up.

Table 1: Status of the Tribal development Fund as on 31st March 2019

Sl No	Heads	Values
1	Total number of projects sanctioned	748
2	No. of states and union territories covered in the programme	28
3	Number of tribal families benefitted	534601
4	Total financial assistance sanctioned from TDF	Rs.2198.16 crore
	Grant assistance	Rs.2057.47 Crore
	Loan assistance	Rs.140.69 Crore
5	Total financial assistance disbursed	Rs.1563.37 Crore
	Grant assistance	Rs.1524.64 crore
	Loan assistance	Rs.38.73 crore

Source: <https://www.nabard.org/about-departments.aspx?id=5&cid=470>

As seen, that as on 31st March 2019 the said TDF programme was able to initiate 748 projects reaching 534601 tribal families across 28 states. The total sanctioned financial assistance amounts to around 2198.16 core and the total disbursed amount is Rs.1524.64 Crore, which is around 71.12 percent of the total sanctioned fund. The state-wise status as on 31st March 2019 is provided in **Table 2**.

Table 2: State wise Status of the TDF as on 31st March 2019

Sl.No.	Name of State	No. of Projects as a Percentage of Total Projects	No. of Families as a Percentage of Total Families Benefitted	Total Financial Assistance Sanctioned as a percentage of Total Financial assistance Sanctioned for 28 States
1	Madhya Pradesh	10.56	12.65	12.27
2	Chhattisgarh	11.23	10.80	10.83
3	Odisha	7.89	9.17	8.92
4	Rajasthan	7.62	9.16	8.37
5	Maharashtra	6.68	8.81	8.15
6	Gujarat	6.42	7.92	7.67
7	Andhra Pradesh	7.09	7.22	7.09
8	West Bengal	6.95	5.55	6.20
9	Jharkhand	5.75	5.58	5.94
10	Karnataka	3.74	4.32	4.23
11	Telangana	4.28	3.71	3.82
12	Bihar	2.94	2.75	3.04

Sl.No.	Name of State	No. of Projects as a Percentage of Total Projects	No. of Families as a Percentage of Total Families Benefitted	Total Financial Assistance Sanctioned as a percentage of Total Financial assistance Sanctioned for 28 States
13	Uttar Pradesh	2.94	2.57	2.87
14	Tamil Nadu	2.14	1.97	2.24
15	Kerala	2.67	1.70	1.90
16	Assam	1.87	1.02	1.14
17	Nagaland	1.47	0.89	0.91
18	Meghalaya	1.34	0.72	0.73
19	Mizoram	1.20	0.56	0.66
20	Uttarakhand	0.94	0.70	0.66
21	Himachal Pradesh	0.94	0.43	0.56
22	Arunachal Pradesh	0.53	0.45	0.50
23	Sikkim	0.67	0.38	0.42
24	Manipur	0.53	0.21	0.25
25	Jammu & Kashmir	0.27	0.13	0.20
26	A & N Islands	0.53	0.38	0.17
27	Dadra Nagar Haveli	0.13	0.15	0.14
28	Tripura	0.27	0.11	0.11
29	HO sanctioned (bee keeping in 2 States)	0.13	0.00	0.01
	Total	100.00	100.00	100.00

Source: <https://www.nabard.org/about-departments.aspx?id=5&cid=470>

As evident from **Table 2** that Madhya Pradesh received around 12.17 percentage of the total sanctioned fund (highest in the list) benefitting around 12.67 percent tribal families. Maharashtra received around 8.15 percent of the total sanctioned fund (5th in the list) benefitting 8.81 percent tribal families.

9. With this backdrop, LHWRF was assigned to initiate the 'Wadi project' in Junnar block. The project started sometime during 2009 and got completed in 2018. Thereafter, NABARD Regional Office proposed to take up third party impact evaluation of select completed projects.

Wadi Project

WADI project is a NABARD funded Tribal Development Programme (TDP) which aims at promoting sustainable livelihoods for tribal communities and enhancing their income security . "Wadi" means a 'small orchard' covering one or two acres. This is a five year project intended to promote orchard

development among the tribal communities. It is envisaged as family centric agriculture where the emphasis is on small land holdings (1-2 acres), agro biodiversity and greater participation of women.

1.3. *Objectives and parameters*

A. Understand socio-economic benefits:

- a. Increase in beneficiary income vis a vis pre development position.
 - i. Income from Wadi, intercrops and border plantations
 - ii. Income improvement to landless families
 - iii. Livelihood improvement for women beneficiaries.
 - iv. Impact of collectivization on income improvement.
 1. Collective input management
 2. Collective storage, processing and marketing
- b. Replication / scaling up of the interventions and its impact
 - i. By the beneficiaries in extended area without project support.
 - ii. By other farmers in and around the project area.
- c. Reduction in the extent of migration in terms of number of families migrating, number of migration days, etc.
- d. Wage employment generated in terms of person days and value of employment created.
- e. Improvement in quality of life in terms of improvement in the living standards, acquirement of new assets, improvement in nutritional, sanitation and other aspects, reduction in health epidemics, etc.

B. Understand environmental benefits:

- a. Land use and land cover change – change in land use pattern, no. of plantation/ vegetative cover increased
- b. Impact of soil and water conservation measures.
- c. Reduction in dependence on forest (for fodder, fuel and other needs) and its positive impact on biodiversity conservation in forest areas.

d. Improvement in climate change resilience

C. Development of community institutions :

- a. Status and role of Village Planning Committees, their participation in planning and executing the work, envisaged improvement in their managerial, technical, book keeping and fund management capabilities and their sustainability.
- b. Role of other institutions such as Farmer Producer Organizations (FPOs), Joint Liability Groups (JLGs) , Self Help Groups (SHGs) and their impact on improved income and sustainability of project benefits.
- c. Convergence with Government programmes, Corporate Social Responsibility (CSR) collaboration, etc. and its impact on effectiveness and complementarity with TDF project.

D. Credit penetration and its impacts:

- a. Impact on linkages with formal credit institutions
- b. Extent of credit flow improvement due to project implementation

E. Role of Programme Implementing Agency (PIA):

- a. Capacities of PIA in mobilizing community, capacity building of the community, planning and execution of various works relating to TDF project (like Wadi interventions, Water Resource Development (WRD), livelihood activates, etc.),
- b. Scheduling of works, staff position and their capacity, Providing technical inputs in execution of works,
- c. Maintenance of records, reporting
- d. Facilitating convergence with other programmes of Government
- e. Corporate Social Responsibility (CSR) collaboration brought-in by the PIA and its impact on overall implementation.

1.3.1. Approach of the study

- a) The study involved primary and secondary data collection on the impact parameters indicated above. The sample selected was provided by the sponsoring agency and it was given to the research team.
- b) Suitable web/mobile based application/app has been developed for data collection which can be used by NABARD for subsequent evaluation studies.
- c) The field staff was involved in data collection was suitably trained.
- d) The assignment also tried to develop the approach and methodologies for further project impact assessments by NABARD.

1.3.2. Timelines

Completion of evaluation study and submission of final report within two months from the date of acceptance of the letter.

1.4. Methodology and Sample Profile

The impact evaluation study is based on both the secondary as well as primary data collected from 12 villages conducting interviews of various stakeholders. Secondary data was also procured from the NABARD office for the said interventions.

The study comprised of the following steps:

- Identifying the beneficiaries who availed the assistance through TDF .In this, NABARD provided us with a list of all the beneficiaries from all the 12 villages.
- The list had the bifurcation of the beneficiaries according to their land holdings- viz, 0.5 acre and 1 acre.
- The study team, thereafter, randomly selected the beneficiaries (**Table 3**) as per the mandate from the said list provided by NABARD.

Table 3: Sample size from each village

Village Name	Number of Respondents with land holding		Total Number of respondents
	.5 acre	1 acre	
Devle	8	5	13
Ghatghar	3	3	6
Hadsar	4	5	9
Kewadi	3	5	8
Khatkale	3	4	7
Kopre	4	7	11
Mandve	4	4	8
Muthalne	6	3	9
Nimgiri	9	4	13
Rajur 1	3	5	8
Taleran	7	7	14
Undekhadak	3	5	8
Total	57	57	114

Source: Field Survey for TDF-1 in Junnar Block, 2019

- Thereafter, the study team was mobilized including the field researchers.
- Continuous contact and consultations with the programme implementing agency (PIA, here Lupin Human Welfare & Research Foundation, Pune) and other related stake holding agencies (like the Malshej Agriculture Producer Company Limited, Santoshi Mata Mahila Bachatghat, Local Gate Keepers, etc) and the NABARD .
- Based on the information provided by NABARD and the project completion report provided by the Lupin Human Welfare & Research Foundation (Pune), further collection and review of related reports, documents, government policies, plans and programs from NABARD were done.
- Development of questionnaires and checklists for primary data collection.
- Interaction and interview with policy makers, planners, bureaucrats, development workers, etc.
- Field survey in the selected 12 villages of the said 110 households.
- The given number of beneficiary households from each village will be selected randomly.
- Analysis of secondary and primary data using appropriate tools.
- Survey of beneficiaries & non-beneficiaries to arrive at a comparative analysis of the advantages derived by the adopters.

Based on the above, we adopted the following methodology for the said study.

Sl.No	Description of the method	Description of the units to be covered
1	Survey Method	
	a. Sample Survey	Selected beneficiary and non-beneficiary households
2	Rapid Appraisal Method	
	a. Focused Group Discussion	Beneficiary and non-beneficiary households
	b. Semi Structured Interviews with Key Informants	<ul style="list-style-type: none">• PIA at district and block levels including NABARD officials• Non-Governmental Organizations (NGOs), Financial Institutions• Village elders, community leaders and Knowledgeable persons

1.4.1. Research Instruments

The research instruments used for the survey comprised of a structured household questionnaire to capture information pertaining to their socio-economic status and livelihood of the sampled households during 2009 and 2019. The questionnaire consisted of 10 sections that had specific questions pertaining to the following aspects.

- 1) General Information
- 2) Understanding socio-economic benefits
- 3) Food Security
- 4) Migration
- 5) Wage employment
- 6) Quality of life
- 7) Environmental Benefits
- 8) Community Institutions
- 9) Credit Penetration and its Impact
- 10) Role of Programme Implementing Agency (PIA)

For this, a member from each household who was above 15 years of age and who undertook the Wadi programme in the household was selected as the respondent. The questionnaire used for the household survey has been annexed. It will be pertinent to highlight here that all the indicators and cross

tabulation generated from the sample data are based on the information as reported by the respondents. The information so provided has not been cross-checked with any other official source. In view of linguistic differences among the population covered by the survey, the schedules were translated into Marathi. Adequate care was taken to ensure construct validity and consistency.

The households formed the unit of assessment for the survey. For the purpose of this survey, a 'household' was defined as 'a group of persons normally living together and taking food from a common kitchen'. By "normally" it is meant that temporary visitors (who have been staying in the household for less than 6 months) are excluded while temporary stay-aways (who have been staying away from the household for less than 6 months) are included. "Sharing food from a common kitchen" is usually given more importance than "Living together" in drawing the boundaries of a household.

The survey was conducted between May, 2019 to July, 2019. Considering the linguistic requirements of various geographies, the training and the actual data collection was planned in a phased manner to cover all the 12 villages. Rigorous monitoring and back checking mechanisms were put in place to ensure quality and authenticity of data being collected. For the survey research associates were hired who can read, write and speak Marathi fluently.

The 'Integrated Tribal Development Program' (ITDP, henceforth), was implemented by Lupin Human Welfare & Research Foundation Pune (LHWRF) in Junnar block of Pune district. The said project started on 31st March 2009 and the actual completion date was 15.09.2017. The ITDP was initiated with an objective to enhance the livelihoods and improving the living conditions of tribal families from a group of tribal villages in Junnar Block of Pune district in Maharashtra. It is worthy to note that NABARD supported ITDP was implemented from 2009 to 2017 by Lupin Human Welfare & Research Foundation in 24 villages of Junnar.

1.5. *Impact assessment*

The overall tribal population of the sample area is more than 90 percent. Given the mandate, the said study was conducted only for the tribal families. This study consists of sample households who belong to the major tribes dwelling in the area called the 'Mahadeo Koli'. Apart from them, in few villages there

were small hamlets of another tribal community called the ‘Thakkar’ community; however they were not a part of this study sample.

Given the geographical landscapes, these tribes prior to the ITDP, was mainly dependent on the forests for meeting their food and shelter requirements. With time, the forests cover gradually reduced and thus they starting searching for alternative routes to earn their livelihood. These alternatives were mainly to get engaged in agricultural activity or in the absence of options for agriculture; they preferred to migrate to nearby cities in search of livelihood. The ITDP had a deep impact on the life and livelihood of the villagers. Today, at least for the villagers who are part of the said ‘Wadi programme’, agriculture is the main option for livelihood in this area. However, agriculture is mainly practiced during the monsoons. The area faces an acute water crisis during the non-monsoon seasons. Therefore, in totality the area is still constrained in terms of the basic input for agriculture, that is water. Constraints like hilly terrain, which further narrows down the option to introduce technology in agriculture further constrains the life and livelihood of these villagers. These constraints had a cascading effect in terms of the nutritional values in their daily diet.

1.5.1. *Income*

Though it was difficult for them to recall the income during 2009 when the ITDP was initiated, however, it was categorically mentioned that life has improved after the introduction and successful (to a large extent) of the Wadi programme through the ITDP .It had significant impact on the life and livelihood of the said villagers. Not only the households who have availed the Wadi programme benefitted, but the said Wadi programme to some extent had a macro effect as well. To note that, the average household size of the study samples is around 5. True, not all have benefitted equally, for obvious reasons which are mainly beyond human control, yet significant rise in income have been observed for villagers who had been successful to overcome those constraints and succeeded to maintain implementation of the Wadi programme.

Table 4: Income categories of the sample households (Rs.)

Income category (Annual, in Rs.)	Number of households
Less than Rs.25000	24
25000-50000	60
50000-100000	21
100000-150000	9

Source: Primary data collected during the field survey, June 2019.

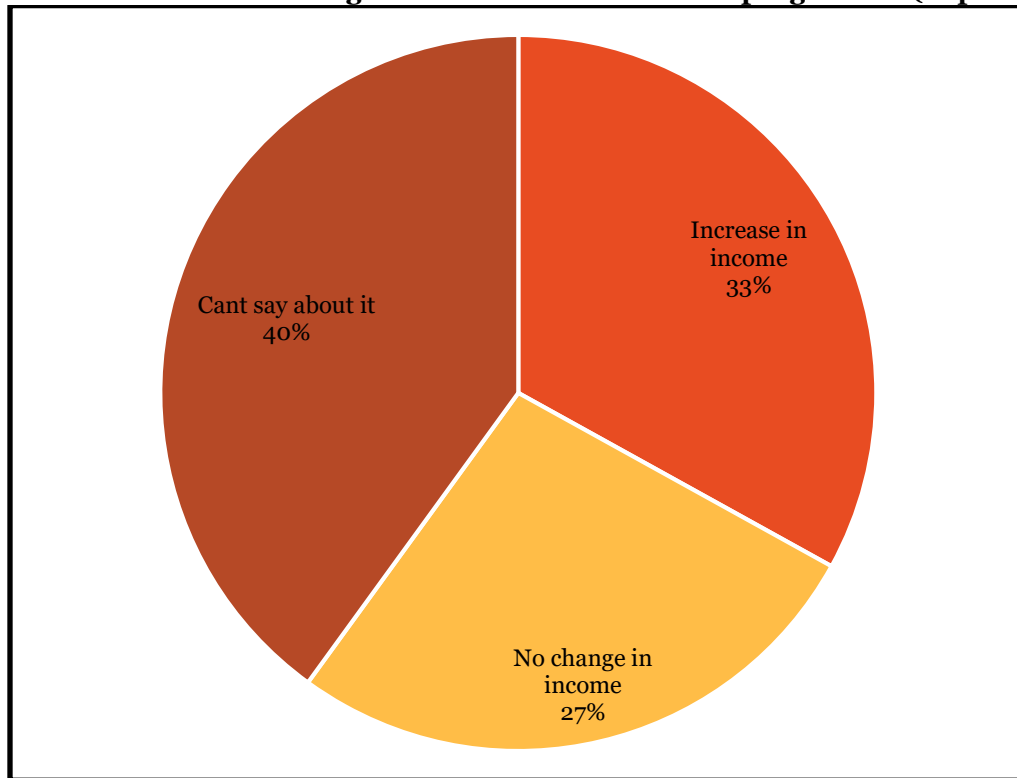
Further in terms of percentage distribution of the households related to the income distribution refer to Figure 2. With this kind of income the per capita income across household also vary based on the income categories. For households with yearly income ranging from Rs.100000 to Rs.150000 the per capita income ranges from Rs.20000 to Rs.30000. This group comprises of 9 percent of the sample households. Similarly, 21 percent of the sample households have an annual income between Rs.50000 to Rs.100000 and the per capita income ranges from Rs.10000 to Rs.20000. However, the largest sample households (60 percent of the total sample) comprises of those for whom the annual income ranges from Rs.25000 to Rs.50000 with a per capita income ranging from Rs.5000 to Rs.10000. Certainly, there is enough room to boost the earning potential of these households, leave apart the rest 21 percent households who strive to survive on a per capita income less than Rs.5000 .

In this, the study team was particularly interested to know if at all the annual income of the households have increased after the ITDP. Certainly, as already mentioned, the Wadi programme may not be solely responsible for the increment. However, the impact of the said programme in influencing and training the farmers to identify and practice alternative sources of income cannot be ignored. In this, it is seen that out of the total 114 households surveyed in 12 villages 33 percent of the households reported a rise



of income in the range of Rs.3000 to Rs.25000, 40 percent preferred not to comment on the agenda and 27 percent reported no change. To understand the rise in income, we have used proxy variables like consumption expenditure, which we shall deal a little later.

Figure 1: Status of income change before and after the Wadi programme (in percentage)



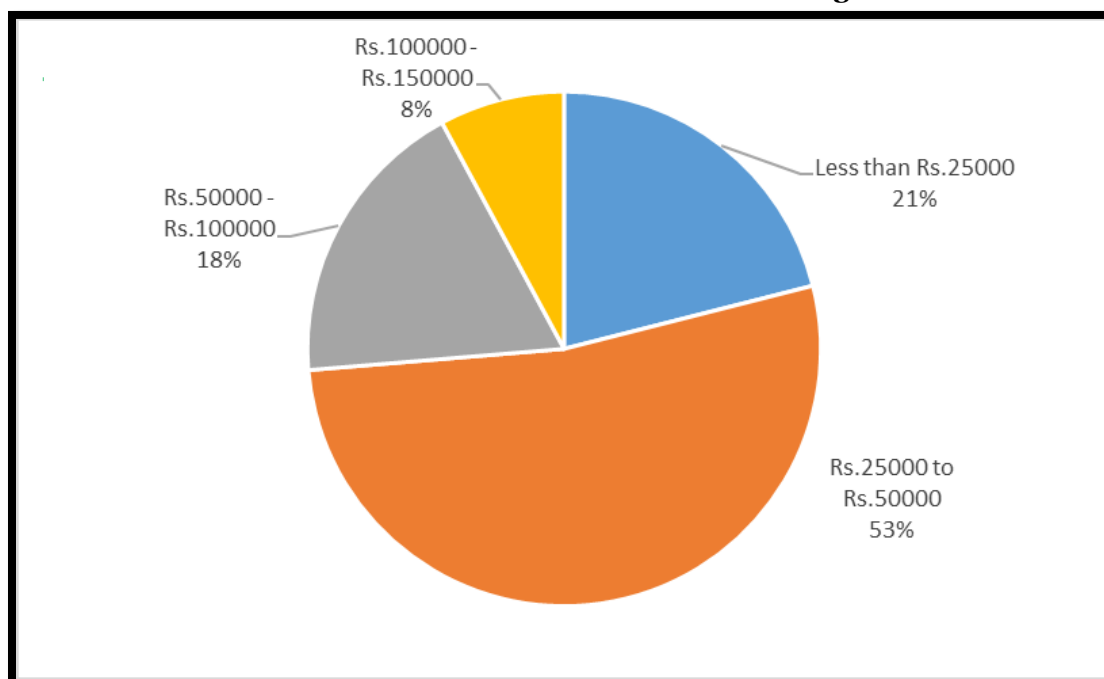
Source: Primary data collected during the field survey, June 2019.

1.5.2. Basic facilities

A further investigation on this skewed income pattern led us to the fact that, as already mentioned, the availability of water and channelizing it to the land is a major challenge in these region. The main crops are Paddy and Nachani. Prior to the Wadi programme the productivity was also quite low. As a part of the Wadi programme sprinklers, pipes, bore wells, Jalkunds were built and were utilized. Such facilities improved the productivity and thus farmers were able to generate substantial income from agriculture. However, the facilities were mostly used to do agriculture in the plains, while families owning land in the slopes could not benefit much from the Wadi programme. Though initiatives were taken by the PIA to utilize the lands in the slopes, but the cost of developing the land and making it worthy for cultivation is enormous. Further, the willingness of the farmers to take up the hard work also needs substantial

scope of returns, which for such land type is low or nil. Therefore, farmers who have their land in the plain and relatively close to their households benefited the most from this programme.

Figure 2: Distribution of the household under different income categories



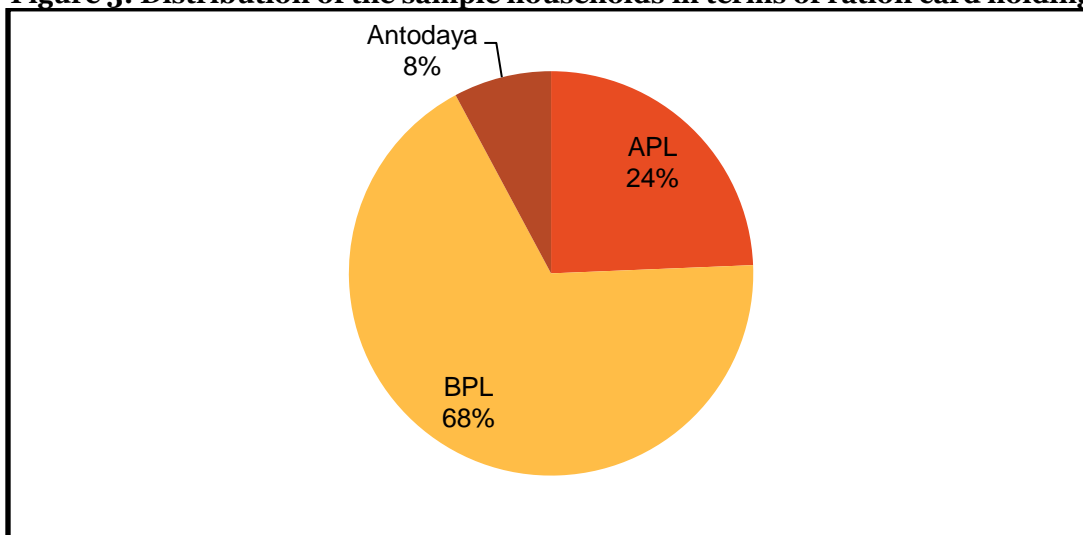
Source: Primary data collected during the field survey, June 2019.



The need to boost the income pattern is also a dire need as around 68 percent of the sample household's fall under the BPL category. Considering data as provided in *Figure 2* and

Figure 3 the average per capita per day income of each of the household member is around Rs. 27 to Rs.30. Therefore, based on the norms set up by both the Rangarajan Committee and the Tendulkar committee, majority of the sample population can be safely considered as extremely poor³.

Figure 3: Distribution of the sample households in terms of ration card holding



Source: Primary data collected during the field survey, June 2019.

In terms of basic facilities like drinking water, toilet and electricity the survey asked specific questions. To understand the impact of the ITDP the status of alike facilities before and after the said programme was investigated. Further, the availability and access to electricity within the household and in the Wadi was an important observation. The availability of both water and electricity in the Wadi is primary for utilizing the land for better productivity. The use of electricity in the Wadi is mainly to pump water through the bore well.

³ The expert committee set up by the Planning Commission last year under Dr. C. Rangarajan, former chairperson of Prime Minister's Economic Advisory Council, has redefined the poverty line. According to the report of the committee, the new poverty line should be Rs. 32 in rural areas and Rs. 47 in urban areas. The earlier poverty line figure was Rs. 27 for rural India and Rs. 33 for Urban India.

Prior to the Wadi programme only 39.39 percent of the household had drinking water facility within their premises, whereas now around 66.69 percent sample households have their own source to fetch drinking water. Similarly the availability of toilet facilities were as low as 38.26 percent during 2009. It has increased to 72.17 percent as of 2019. Certainly this is not to say that such increment in basic facilities is only due to the Wadi programme. There are several government schemes which were promoted during the time frame in concern and the increment in those basic facilities are a cumulative effect of all such initiatives. However, the fact cannot be ignored that the Wadi programme had succeeded in spreading the awareness related to safe drinking water and toilets. When it comes to electricity, it is worthy to note that 48 percent of the sample household's have electricity connection in their households. However, the accesses to electricity in the Wadi's are as low as 19.13 percent. Needless to mention that, to operate the bore well or other gadgets for agriculture the villagers often bank on unfair means like hooking to get electricity.

Having said this, the irony is, the water level in most of the villages has gone down and the wells gets dried during the non-monsoon season. Therefore, simply having the source within the premises hardly help the villagers to mitigate the problem of safe drinking water or using the toilet facilities within the household. Fetching drinking water from far away source is a routine and open defecation is quite common. **Figure 4** and **Figure 5** shows two scenarios in two different villages.

Figure 4: Involuntary non-use of sanitation facilities in Hadsar



Figure 5: Sole source of drinking water in Ghatghar



Source: Primary data collected during the field survey, July 2019.

In Ghatghar we came across a polluted well (**Figure 5**) which is the sole source of drinking water in the village. The villagers use the same for their daily use by putting chlorine to purify the water. The purity

of the water is still questionable. As seen in **Figure 4** there are water reservoirs and toilets within the premises in most of the village. However, like Hadsar (in the picture) due to non-availability of water in the non-monsoon seasons the reservoirs remain dry and the toilets remain involuntarily unused in all the sample villages. Open defecation is the only way out for the villagers. They may manage some water to clean up themselves after defecation, but fail to manage enough water to flush out the waste, naturally the toilets remain unused. Such cases can be treated as a wastage of infrastructure which do not have any forward linkage due to the absence of water harvesting.

Apart from the non-availability of water, the locational disadvantages also impose further burden on the farmers to continue cultivation. For example, in Udekhatak most of the lands owned by the concerned households are situated on the slopes of the Sayadri hills. Therefore, the water does not stop and keeps flowing towards downstream. The village ends up not having enough water to sustain daily life. Villagers have to buy water from water tankers and buy drinking water from local sources like wells, handpumps, pipelines, etc which are owned privately in village. In some cases the cost of water is as high as Rs.150 per hour with a thin flow through the pipelines. Lack of water has led to farmers only producing one crop (rice) a year.

In Rajur-1, SHG has lent money to buy the flour mill. Here the 'Gharkul Yojna' has been implemented and the positive intervention of the SHG proved to be positive while implementing the same.

However, in Rajuri-1, the study team observed that there is an unequal access to the water. Few farmers have water pumps connected to the dam, while others have no access to the water and therefore they have to pay Rs. 150-200 per hour to have access to water for agriculture.

As far as drinking water is concerned, people are getting good quality of water at very cheap rate due to water meter. One main problem faced by the farmers is the storage facilities. Lack of storage facility is the main reason behind post-harvest loss for agriculture commodity.

1.5.3. Formation of Self-help Groups (SHGs)

When it comes to the formation of the Self Help Groups (SHGs), it is important to note that SHGs are expected to build the functional capacity of the poor and the marginalized in the field of employment and income generating activities. They are also expected to resolve conflicts, provide collateral free loan, work as a collective guarantee system for members who propose to borrow from organized sources and alike. In India the Genesis of SHG can be traced to formation of Self-Employed Women's Association (SEWA) in 1970. The SHG Bank Linkage Project was launched by NABARD in 1992 and now it has blossomed into the world's largest microfinance project. To strengthen the initiative for an even robust outcome, NABARD along with RBI permitted SHGs to have a savings account in banks from the year of 1993. This action gave a considerable boost to the SHG movement and paved the way for the SHG-Bank linkage program.

Figure 6: Water ATM in Rajur 1



The recent initiative of the Government of India⁴, proposed that for every verified woman Self Help Group (SHG) member, having a Jan Dhan Bank Account, an overdraft of Rs.5,000 will be allowed. Realizing the potential of the SHGs, the Government proposed to expand the Women SHG interest subvention programme to all districts. Further, as per the directive one woman in every SHG will also be made eligible for a loan up to Rs. 1 lakh under the MUDRA Scheme.

In the study areas the footprint of the 81 SHGs formed through the programme was quite prominent. In all the 12 study villages we found members of the SHGs and around



⁴ For details refer to PIB release dated 05-July-2019 13:38 IST. <https://pib.gov.in/newsite/PrintRelease.aspx?relid=191277>

1000 villagers are part of the SHGs now. Landless members like Chindabai Devram Nirmal (Taleran), Leela Modak (Khakkale), Janabai Muthe (Kopre), Natha Gopala Nikam (Kewdi), who are very active towards maintaining the SHGs in their respective areas. Further, looking at the successful outcome of the SHG formation people like Sakhubai Chandrkant Lande (Kewadi) joined in 2018 or Nandakantaram Borade (Devle) joined in 2016. Based on the sample in concern it can be said that the percentage participation of the sample households have increased. Prior to the Wadi programme the participation was as low as 23 percent, while after the intervention of the said programme the PIA carried out massive awareness campaign in the villages. The result is quite visible when we see that among the sample households, today the participation rate has gone up to 55 percent, which is more than double. The beneficiaries have taken loan to buy flour mills (3% of the total sample), set up grocery shops, etc and thus generate alternate source of living apart from agriculture. Such examples were cited in Rajur 1 and Kopre.

Added to the above, for landless families as well as SHG members, initiatives like backyard poultry, vermi-compost production and goatery were introduced. The interested families were provided with a credit support upto Rs. 20,000 from the project. The interested families were trained in the specific skills involved in managing the particular activity. We came across respondents like Kalu Sakharam Supe or Sitaram Supe who started flour mills by taking loans from the SHG. The formation of the SHGs have resulted in further formation of Village Organizations (VOs). The VO is a body of two members from each of the SHGs formed in a village. The VOs mainly act as pressure groups within a village which acts as a mouth piece of the marginalized. The role of the VOs can be well observed in terms of generating alternate source of employment, their impact on housing and health – especially for the women and the children. Last but not the least the VOs are very active in implementing banking literacy and encouraging financial inclusion by convincing the banks of assured returns and incentivizing the banks to lend to the SHGs. Thus, through the VOs the SHG-Bank linkage programme pioneered by NABARD is making access to credit easier and reducing the dependence on traditional money lenders and other non-institutional sources.

Figure 7: Hatchery in Taleran generating income for the beneficiary



Source: Primary data collected during the field survey, July 2019.

Sai Swayamsansta Bachat Gat (Rajur 1)

Sai Swayamsansta Bachat Gat was set up during 2014 mainly for two reasons. Firstly, to improve the economic status of the women and families of the village and secondly to increase the participation of the community in development activities. All these would essentially lead to increased savings of the households. The SHG is led by Mrs. Shaheen Inamdar.

Currently, this SHG has 11 active members. After the formation of the SHG, the Tribal Development Fund has aided in the form of financial loans over the past 5 years. A multitude of activities like annual or bi-annual exposure visits are conducted through the TDF programme by the Lupin Foundation. Mrs. Shaheen mentioned that these visits have proven to give the SHG members exposure to skill development and awareness.

Decisions in the SHG are taken via group meetings and whenever a loan is taken a 2 percent interest rate is applied. Through TDF, the SHG received support for setting up a goatery with a loan of Rs. 1,25,000 and more financial support to purchase buffaloes were provided. There are instances where members have taken a loan from NABFINS worth Rs. 40,000 to purchase animals. Mrs. Shaheen said that there need to be more schemes implemented in favor of women development and NGOs.

Through the SHG, Mrs. Shaheen has successfully set up a grocery shop/convenience shop in the village. She said that her family has made tremendous progress after this and the shop has been running successfully ever since.



It has been observed that the role of the facilitator is critical in strengthening group processes and truly instilling the concept of self-help. Their effectiveness in disseminating information, upgrading skills and facilitating linkages, contributes towards the extent of self-reliance of the group. Training, capacity-building support and networking of groups is essential for their long-term sustainability and herein the role of the PIA is noteworthy. We tried to understand the extent of the costs incurred to form these SHGs, however, it could not be done. The reason being that costs incurred to form these SHGs are

functions of the social and economic context in which the SHGs were formed. Rather, considerable amount of non-monetary support was required by the groups to form the SHGs.

Santoshi Mata Bachat Gat , Taleran

The Santoshi Mata Bachat Gat was established in Taleran around 3 years ago. Mrs. Sangeeta Sawale is the current Chairperson of this SHG. She is also the Sarpanch of the village (Taleran). This group was started by 14 members who are still part of this SHG and are active members. Mrs. Sangeeta is also a part of the wadi programme going on in Taleran as a part of TDF-1.

On the 5th day of each month, the monthly meeting is conducted. A register is maintained to keep records of these meetings, participation and the detail agenda. Initially, the SHG had taken the loan of Rs. 70000 from NABFINS and eventually repaid the debt. Thereafter, a loan of Rs. 3 Lakh was taken. The interest rate for the same is 17.5% which gets reduced with every repayment. From this money, SHG has brought the hatchery machine (Figure 7). The SHG also lend money to the members as well. Few members have taken money for farming as well as educational purpose. One member has brought JCB and now she is able to rent out the JCB for various purposes.

Though the local panchayat do not get involved in the day to day activities of the SHG, however, they do support the initiatives taken up by the SHG from time to time. For example, on 8th March 2019 (Women's day), the SHG with the help of the local panchayat conducted an awareness campaign related to social issues and issues related to female health. The panchayat donated Rs. 18000 for the same to the SHG.

The members of the SHGs are quite hopeful about the future potential of activities proposed to be taken up by this SHG. For example, they are planning to take up projects related to mushroom production, providing sewing machines, etc.



1.5.4. Formation of FPO⁵

One of the important component of this ongoing project was to form Farmers Producer Organisation (FPOs, henceforth). On the 14th of August 2015, the PIA had formed the FPO named as 'Malshej

⁵ Farmers Producer Organisation (FPO) is a type of producer organization (PO) where the members are farmers. Producer Organization (PO) is a legal entity formed by primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen. A PO can be a producer company, a cooperative society or any other legal form which provides for sharing of profits/benefits among the members. In some forms like producer companies, institutions of primary producers can also become member of PO. The main aim of PO is to ensure better income for the producers through an organization of their own. Small producers do not have the volume individually (both inputs and produce) to get the benefit of economies of scale. Besides, in agricultural marketing, there is a long chain of intermediaries who very often work non-transparently leading to the situation where the producer receives only a small part of the value that the ultimate consumer pays. Through aggregation, the primary producers can avail the benefit of economies of scale. They will also have better bargaining power vis-à-vis the bulk buyers of produce and bulk suppliers of inputs.

Agriculture Producer Company Ltd' under the company's Act 2015. The registered office of the company is at A/P 345, C/O Dunda Soma Ghode, Post- Taleran, Tal - Junnar, Pune, Maharashtra. The FPO has an Agriculture Service Centre (ASC) at Pargaon village beside Kalyan Ahmednagar road. The members of this FPO are farmers from nearby villages like BegadWadi, SiteWadi, Taleran, Khaire, Khatkale, Nimgiri, etc. Out of these 6 villages, Taleran, Khatkale and Nimgiri were part of this impact assessment study.

Figure 8: The study team from SSE with the FPO members at the ASC, July 2019



Source: Primary data collected during the field survey, July 2019.

Currently, there are around 550 members who are actively associated with the FPO. The FPO sells agriculture input material and animal feed through the ASC which started functioning from 16th January 2016. As per the audited records of this FPO as on 30th August 2017, the total turnover of company is Rs 57.94 lakh. Malshej Agriculture Producer Company Limited's Annual General Meeting (AGM) was last held on 25 September 2018 and as per records from Ministry of Corporate Affairs (MCA), its balance sheet was last filed on 31 March 2018. Currently, the FPO has 10 Directors..

Small Farmers' Agribusiness Consortium (SFAC) is providing support for promotion of FPOs. PO is a generic name for an organization of producers of any produce, e.g., agricultural, non-farm products, artisan products, etc.
For a detailed discussion on the same refer to 'Farmer Producer Organizations - Frequently Asked Questions (FAQs)', Published by: Farm Sector Policy Department & Farm Sector Development Department NABARD, Mumbai, 2015.
<https://www.nabard.org/demo/auth/writereaddata/File/FARMER%20PRODUCER%20ORGANISATIONS.pdf>

However, on 14th August 2015 it started with 9 Directors- Maruti Vitthal Chakave, Dattatray Yamanaji Chakave, Dunda Soma Ghode, Balu Baburao Chakave, Vinayak Sitaram Chakave, Baliram Ganpat Chakave, Jayram Nimba Mene, Khandu Dadabhau Chakve. On 8th January 2018, Shobha Rohidas Mojad was inducted one of the Directors of this FPO.

Mrs. Mojad informed that before the formation of the FPO, farmers were buying agricultural inputs at a high rate. However, similar quality products are now sold at a lower through the FPO and therefore, farmers have an access to avail these products. The FPO also provides assistance to the farmers related to new techniques to produce rice production, rice plantation and alike. The benefits of these initiatives are quite visible when we see that despite being a tribal area and prone to traditional techniques, now farmers are gradually trying to shift towards those better modes and means of cultivation. This, low cost advanced methods of farming, not only increased production but also increased income. Farmers across villages mentioned that generally they are reluctant to use seeds provided by the private vendors as they are skeptical about the quality of those seeds. However, based on the strong local network, the FPO managed to earn trust of the tribal farmers and therefore, the products offered through the FPO are well accepted and high in demand. Needless to mention that the footprint thus earned by the FPO can also be used to promote further developmental activities in these areas.

The FPO is planning to expand their activity by encouraging the forward linkages by promoting the marketing activities for agricultural commodity. However, due to the landscapes and other constraints like bad connectivity, absence of storage facility and alike the supply chain is getting affected.

1.5.5. Migration

As mentioned, the primary occupation of the sample households is agriculture. However, it is heavily dependent on the monsoon and therefore is basically a seasonal activity. Further, not everyone has enough land areas or means to produce their livelihood even during the agriculture seasons. Given this, to earn their livelihood round the year, members of the family use to migrate to nearby towns in search of employment, either as agricultural labourers or construction workers. Based on the data collected during the field survey, it was observed that almost 64 percent of the households had a history of

migration to earn their livelihood, even few years back. To them, as agricultural labourers the preferred choice are places like Junnar and Narayangaon. Here, they are engaged as agricultural labourers for transplantation of onion, plantation and harvesting of banana, grapes, vegetables, etc. Some of the members are known to migrate to urban areas including Pune and Mumbai. Usually one or two members from a family are known to migrate, however, in certain cases the entire family migrates for about four to five times in a year.

Even now, during the dry seasons people do migrate. The period of migration may vary from 15 days to 30 days. Their gross earning is around Rs.200 to Rs.300 per capita per day as agricultural labourers, however, the net earnings are very meager and part of the earnings goes to the contractors who acts as a middle man between the primary employer and the villagers. On an average they earn around Rs. 10,000-15000 per annum. The availability of such opportunities are not reliable enough and at times the families had to stay hungry. The major push factors for migration in these areas is non-availability of work during the non-monsoon seasons and major pull factors are expectation of higher income and better work opportunities. As reported by the respondents they generally prefer to migrate to nearby districts or towns rather than migrating to other state for earning livelihood.

The situation of landless families was even more critical, as there are very few opportunities of non-farm based livelihoods. Landless farmers work as agriculture labourers during the monsoon and migrate during the remaining period of the year. Post the Wadi programme, it has been observed that the main beneficiaries are the landless farmers who have alternate opportunities to earn their livelihood within their village. For example, they have taken up activities like poultry, hatchery, goatery, kirana shops in their villages. To buy goats and get engaged in commercial goatery around 50% of the landless respondents mentioned that they got a loan amount of Rs.24000 through the PIA. It was learnt from the respondents that goats do not need any additional feeding. They can sustain on agricultural waste and the leftovers from harvesting. Therefore the cost of rearing goats are almost nil. During their lifespan goats produce milk which have high nutritional value and also a significant demand in the adjoining areas. Further, after a certain point the goats can be sold and thus they serve as a source of twin income for the said landless respondents. As a part of this wadi initiative the goats are also insured.

In case of a death due to accident including fire, lightning, flood, cyclone, famine, earthquake, landslide, strike, riot or diseases contracted or occurring during the period of insurance, the owner is compensated. The same was observed for cattle as well.

These has incentivized others who were not a part of the Wadi programme, interact with the SHGs or the PIA to understand further scope of such employment and earning generating activities round the year. As an outcome it was observed that among the sample households, as on 2019 the extent of migration is as low as 25 percent. There are instances where the nature or reason of migration has actually changed. Today the migration to nearby towns (Pune, Junnar, Narayangaon and Mumbai) are mainly for higher studies and/or for availing better health facilities.

1.5.6. Asset holding

The term 'asset' is defined as 'the stocks of financial, human, natural or social resources that can be acquired, developed, improved and transferred across generations'. Significant indicators of the overall welfare of individuals and households heavily depends on ownership, access, and control over productive assets. Primarily they act as a social safety net, strengthening household's ability to cope with and respond to shocks by enhancing their ability to diversify their income and ease liquidity constraints⁶. Such ownership, access, and control over productive assets also act as an income generating mechanism enhancing households' productive capacity, ensuring access to credit, and capital.

The survey therefore categorically inquired into the status of households with regard to ownership of various physical assets like land, livestock, high value agricultural implements or consumer durables. The sub-sections ahead present a description of households on the basis of ownership of various types of assets which give an insight into the distribution of wealth among the various categories of households. Land forms an important livelihood asset for the households. The ownership of land helps enhance the income opportunity and reduce poverty. One of the most significant advantages of

⁶ Kailash Chandra Pradhan & Shrabani Mukherjee, 2018. "Covariate and Idiosyncratic Shocks and Coping Strategies for Poor and Non-poor Rural Households in India," *Journal of Quantitative Economics*, Springer; The Indian Econometric Society (TIES), vol. 16(1), pages 101-127, March.

ownership is that it acts as a collateral for accessing credit. It acts as an indispensable input in cultivation. It can be reused multiple times, offering enhanced economic returns to the households. Above all, it can offer the advantage of liquidity and acts as a general indicator of affluence. When inquiring about the household asset portfolio, the households were asked to give details of the total land available including cultivated land, current fallows, orchards & plantation, barren land & pastures, land used for non-agricultural uses, as well as homestead land. They were asked to provide details for all such types of land in terms of the area over which the household has the legal ownership right, the area leased-in or leased-out by them, and area over which they have no legal right but is possessed otherwise.

In **Table 5**, we present the assets that the survey could register during the field visits. It is seen that there is a visible change towards asset ownership. **Table 5** provides us with the extent of individual ownership for different types of assets. Added to this, there are assets which are of joint ownership. For example, the jalkunds, tube wells, bio gas plant, etc. The increase in the number of mobile phones, LPG connection, and electricity only adds to the rise in welfare of the tribal families.

Table 5: Individual asset ownership during 2009 & 2019

Assets in possession	2009 (%)	2019 (%)	Change in percentage points
Inputs for Agriculture			
Plougher	1	6.1	5.1
Trolley	1	1.7	0.7
Manual Sprayer	4	11.3	7.3
Cattle shed	15	22.6	7.6
Electric pump	1	14.8	13.8
Diesel pump	0	4.9	4.9
Plougher equipment's-wooden	29	47	18
Plougher Equipment's-iron	3	7.8	4.8
Animal Husbandry			
Cow- Local breed	5	22.6	17.6
Cow-Jercy breed	1	2.6	1.6
Buffalo	10	23.5	13.5
Sheep	5	13.9	8.9
Goat	1	5	4
Durable Goods			
Bullock	25	37.4	12.4
Television with Cable	19	70.4	51.4
Mobile handset with connection	9	77.4	68.4
Cycle	4	7.8	3.8

Assets in possession	2009 (%)	2019 (%)	Change in percentage points
Motor cycle	7	25.2	18.2
Tractor	4	6.1	2.1
Refrigerator	0	7.8	7.8
LPG connection	2	60.9	58.9

Source: Primary data collected during the field survey, July 2019.

However, it is also true that we could not trace the existence of smokeless chullas, kitchen garden, rooftop glass window in kitchen area in any of the sample households. Discussion with the PIA and the unit level stakeholders revealed that, in some cases these were provided but could not be maintained or retained.

Not only the villagers with land got benefitted in terms of increasing their assets, as mentioned previously the most notable change was observed for landless beneficiaries. Among the sample households we came across instances of earning livelihood post the Wadi programme via means of dairy development, Goatery, Poultry, Kirana shops. Dairy & Goatry units are covered under insurance schemes to provide hedging against economic loss to the participants. The annual income of the beneficiaries from these off-farm activities



ranges from Rs.10000 to Rs.50000. The assets are mostly created through loans from SHGs or banks and interestingly most of these borrowers are first time borrowers from any formal sources. Such examples of success stories were traced for many sample households. Laxman Sitaram Munde (Rajur 1), Raju Tammak Modak (Khatkale), Dhanaji Bagu Nagare (Undekhadak), Parabai Sakharam Landhi (Taleran) and many alike are live examples of success stories.

In terms of natural resources as an asset base, the Wadi programme proved to be quite impressive. It was noted that all together 1614 cashew saplings and 2426 mango saplings were distributed across these 115 households during the initiation of the Wadi programme during 2009. As on 2019, the survival rate for both Cashew and Mango trees are 37.48



percent and 49.46 percent respectively. Both Mango and Cashew has been mainly considered as a crop for afforestation and soil binding to check erosions in these regions. They are planted in the land bordering the Wadi. Trees like bamboo, teak , hirda were also visible in some of the Wadi areas. However, both Mango and Cashew are seen as products which are seen as less commercially beneficial to these tribal families compared to bamboo or hirda. There are instances where selling of mango has earned them around Rs.60000, however these examples are very limited. The farmers mostly use the mango for self-consumption. Farmers who have a well-managed supply chain network mostly benefitted from the mango plantations. For cashew, we could not trace a single family who have benefitted commercially from producing cahsew. However, cashew cannot be consumed directly as it has to undergo a processing before extracting the seed which people consume. The process is costly and needs sophisticated techniques. Unavailability of such processing units around and no supply chain only added to plantation of Cashew trees, but no commercial benefit. On the other hand plantation of bamboo, teak, hirda are far more commercially viable and easy to market. The tribal families, given their experiences from Mango and Cashew showed a clear preference towards Hirda. Bamboo and alike plantations.

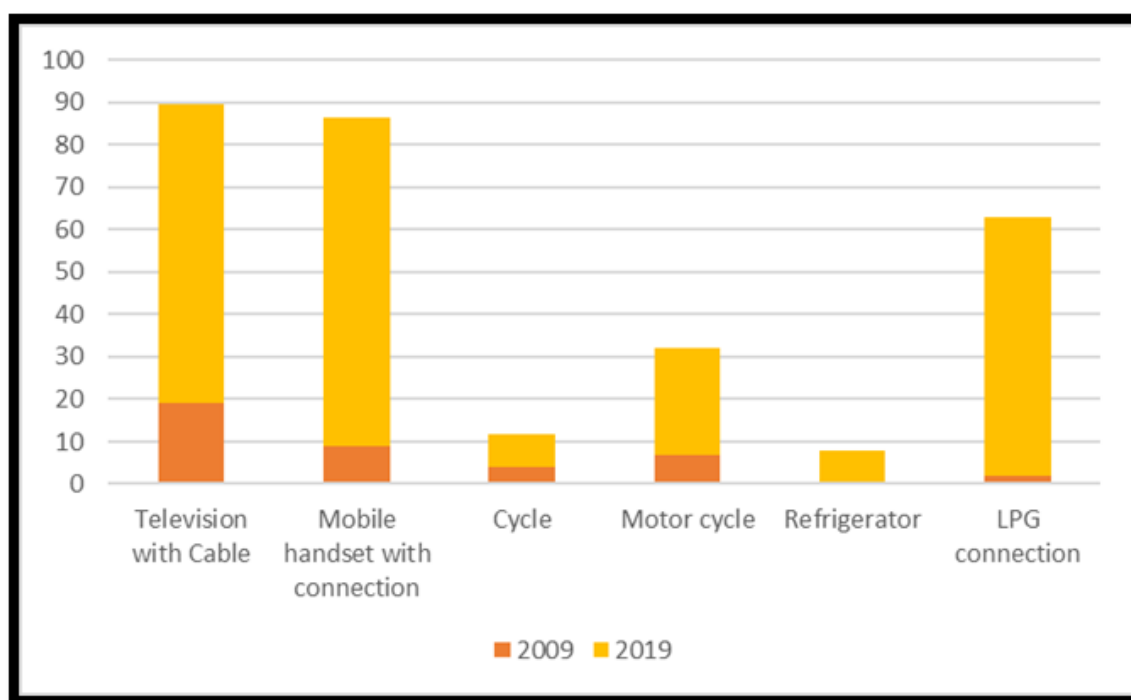
Further investigation revealed that the Wadi program was an initiative carried out in the area to provide farmers a sustainable way to do farming. As mentioned, the Wadi system was divided into 0.5-1 acre of farmlands owned by farmers, in a terrace farming fashion. Added to the low access to a strong supply chain mechanism, even with around 49 percent survival rate, the benefits from Mango production could

not be absorbed by the farmers due to theft or environmental conditions. As mentioned, to curb the problem of soil erosion these farmers who own the Wadi were given the provision of planting mango, hirda and cashew grafts along the border of the Wadi with a distance of at least 3 feet between each sapling. Unfortunately, this was not followed by the farmers at an initial stage. Subsequently, it became a serious issue when the graft started growing in length and breadth. The improper distance in many cases hindered the growth by interrupting the rooting system.



In terms of the lifestyle, **Figure 9** provides us with a comparative picture in terms of access and availability of amenities during 2009 and 2019.

Figure 9: Percent households having access and availability of amenities



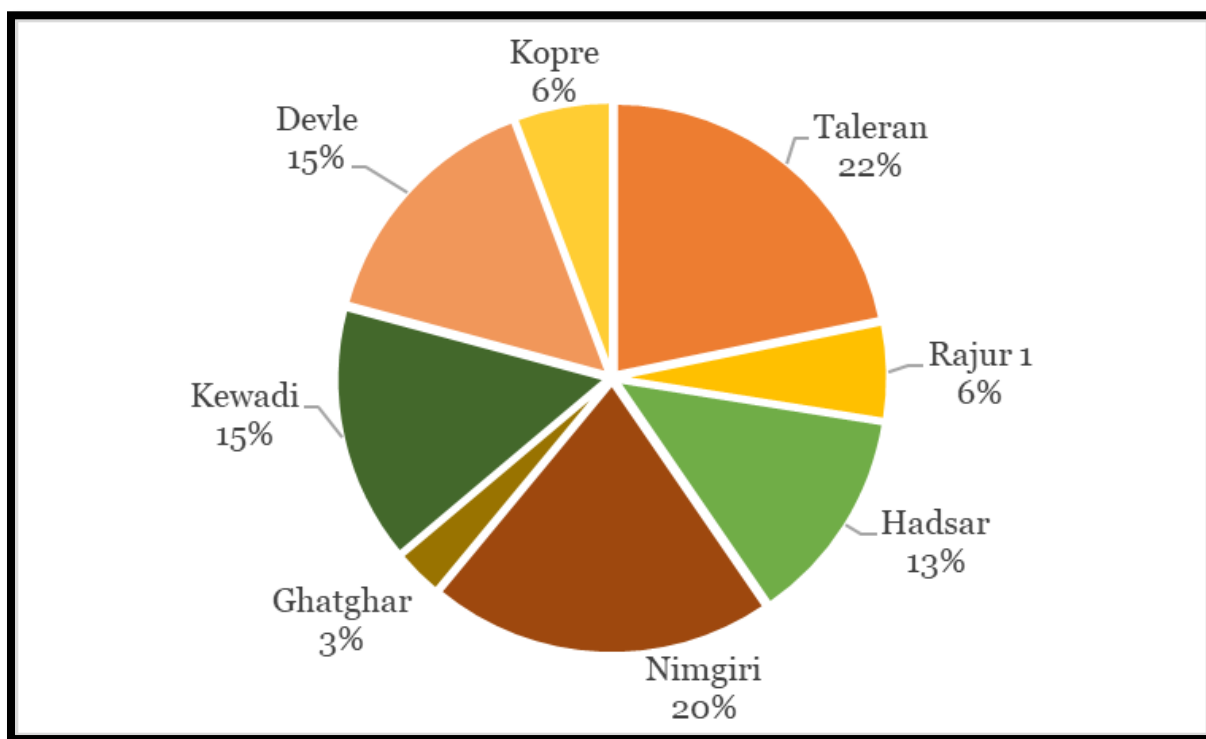
Source: Primary data collected during the field survey, July 2019.

The findings presented in this section are indicative of the overall economic status of the rural households. The availability of land, livestock and farm equipment have a great bearing on the earning potential of the household.

1.5.7. Credit

The formation or ownership of assets has a deep link with the credits that were provided by the PIA as a part of the TDF programme. Needless to mention that lack of access to institutional and formal credit suitable to the needs of poor tribal families is a major economic constraint. Further, the needs of the tribal families are lesser, random, urgent and consumption oriented, therefore, not catered to by banks. As a result of this they have a high dependence on private moneylenders who extract high interest rates and also enforce other insidious conditions of repayment (lien on crop produce, mortgage etc). Lack of credit also inhibits ability to invest in productive purposes hence poverty remains persistent among vulnerable groups such as tribals. **Figure 10** provides us with the information of households who have availed loan from the TDF through the PIA. It is seen that Taleran (22%) has the highest number of beneficiaries who availed loan from TDF followed by Nimgiri (20%), Kewadi and Devle (15 % each) and Hadsar (13 %).

Figure 10: Percentage of households who availed loan



Source: Primary data collected during the field survey, July 2019.

The majority of these loans were taken by the members of the SHGs to buy goats. The next major purpose to take loan was to start poultry or buy buffaloes. All the beneficiary have repaid their respective loans and thus now they are 'debt-free'. This once again proves that loans used for productive purposes and if production takes place as guided do result in positive outcome and upliftment of the



economic status to a great extent.

Credit also plays a major role to combat distress situations. They were asked if they were affected by these events/emergencies

any time in the last 10 years preceding the survey. Those who reported to have had faced it, were further probed about the strategies they adopted to cope with the loss. The households that reported to have been exposed to such distress events when probed about the coping strategies adopted mostly reflected dependence on personal savings. A majority of households across all types of events stated to have utilized their savings to make up for the loss. Taking loans was cited as another major step taken by such households.



1.5.8. Consumption Expenditure

A household is classified as poor if its consumption level is below the poverty norm. In India, the welfare profile is usually measured using consumption expenditures of the households because income represents potential, but not actual, consumption. Consumption expenditures are measured because they are less volatile over time, and are considered to be measured more reliably. However, during surveys, measuring consumption expenditure poses certain challenges. One of the major challenges is respondent fatigue or inability to offer exact estimates. While the other problem comes in the form of volatility, as the expenditure of some households may have shot up during the reference period due to marriages, debts or health crises, which then create unrepresentative spikes for some households. Nonetheless, consumption expenditures combined with the measure of household possessions offers a

fairly good estimate of levels of economic well-being. Naturally, one of the primary elements to sustain life and livelihood is to have proper intake of food and that too in proper intervals. It has been observed that around 82 percent of the sample households depend on rice as their staple food and they grow the same in their own fields.

Rice is consumed every day in all the households surveyed. Along with rice, wheat is also consumed is some of the households. Around 24 percent of the respondents claimed to consume wheat along with rice every day. They also grow wheat in their own farms.

The rest of the respondent buy rice and wheat from the market. The average yearly per capita consumption of rice and wheat is around 38 Kg and 51 Kg respectively. In this, the participatory demonstration of four point rice production technology⁷ by the PIA have successfully been implemented.

Farmer's field days were organized which helped farmers to adopt four point rice production technology for higher productivity and income.

Table 6: Monthly per capita consumption expenditure on food items (Rs.)

Food Items	Nominal expenditure in 2009	2009 expenditure in 2019 prices	Real expenditure in 2019	Difference in real terms
Column Number	A	B	C	D
Rice	70	125.31	150	24.69
Wheat	80	143.21	160	16.79
Vegetable	50	89.51	97	7.49
Pulses	42	75.18	86	10.82
Fruits	15	26.85	27	0.15
Milk	51	91.30	110	18.70
Egg	30	53.70	54	0.30

⁷ The said technique refer to the following stages followed during rice cultivation. They are- recycling of rice plant residues (Rice hull, Ash and straw), application of rice hull ash to seedbed for growing rice seedlings, incorporation of rice straw into soil during ploughing and control planting of rice seedling.

Food Items	Nominal expenditure in 2009	2009 expenditure in 2019 prices	Real expenditure in 2019	Difference in real terms
Fish	28	50.12	50	-0.12
Meat	12	21.48	21	-0.48
Total	398	712.47	755	42.53

Source: Primary data collected during the field survey, July 2019.

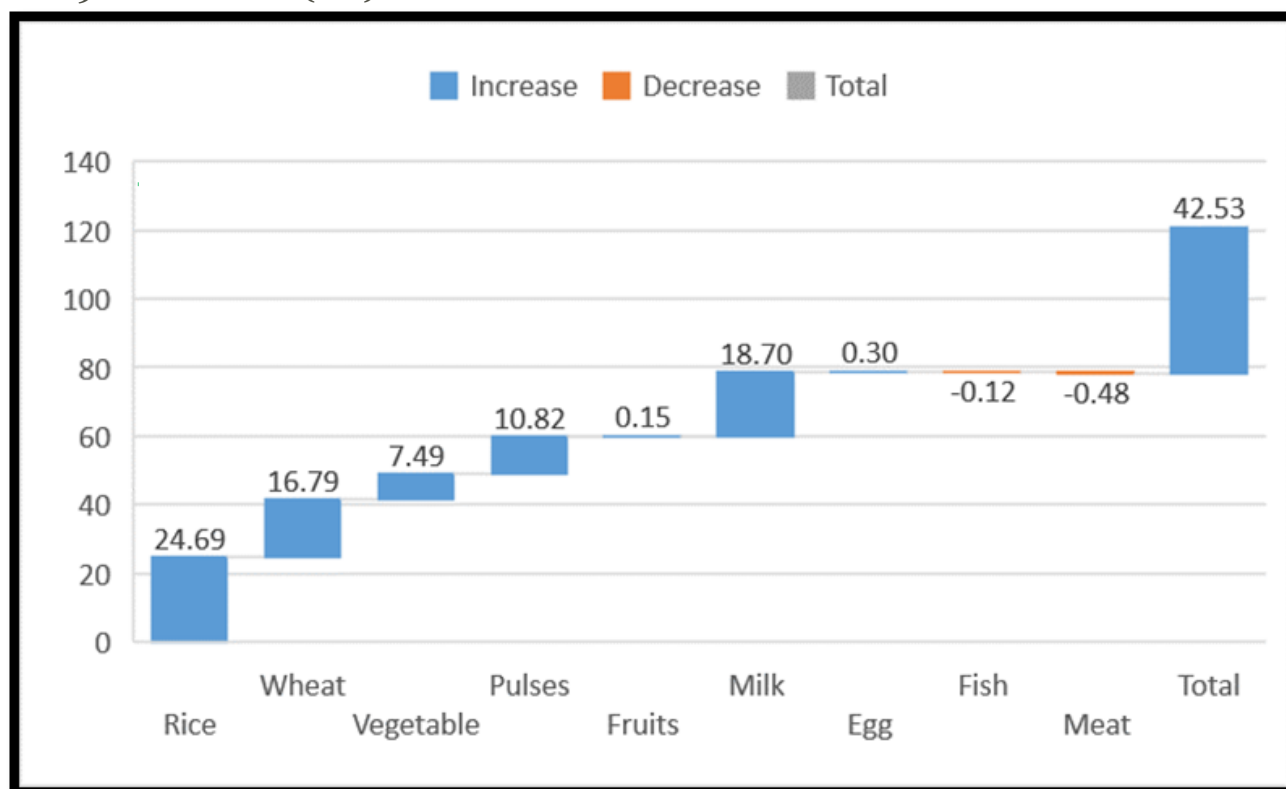
Note: Consumer Price Index (CPI) PI rural for 2009 and 2018-19 for Maharashtra (Agri labor) with base year 1987 (Extracted from Centre for Monitoring Indian Economy (CMIE⁸). Thereby the figures for Table 4 have been calculated.

In **Table 6**, we present the monthly per capita consumption expenditure on food items (Rs.). In terms of nominal expenditure we see that for all the items there has been an increase in consumption expenditure. However, for authenticity and better comparability the nominal data for 2009 (column A) on monthly per capita expenditures on different items were converted to their 2019 prices (Column B) using the CPI deflator. Thereafter column C was construed converting the nominal data obtained for the said variable into real terms. Finally column D shows the difference between the two real expenditure figures (column B and column C). Certainly the average real consumption expenditure has increased from Rs.79.16 during 2009 to Rs.83.88 in 2019. The major rise has happened for wheat followed by rice, milk, vegetables and pulses. The expenditure for fruits and eggs have marginally increased, whereas the expenditure for fish and meat has actually fallen.

Figure 11 provides us with a graphical representation of the change in monthly per capita consumption expenditure between 2009 and 2019 in real terms (Rs.)

⁸ For details refer to www.cmie.com

Figure 11: Change in monthly per capita consumption expenditure between 2009 and 2019 in real terms (Rs.)



Source: Primary data collected during the field survey, July 2019.

Such behavior in terms of rise in consumption expenditure can also be seen from the lens of food security. It provoked us to understand the availability, sufficiency of the food items to which they have access supported with the affordability to buy. This particularly pertain to the basic minimum food items in certain quantity which is the least minimum to meet the hunger of the concerned person. In this, food items like rice, dal, potato, one green vegetable were considered. *Table 7* provides us with the information in this regard. It is seen that there is a considerable rise in terms of availability of food items and its sufficiency during 2019 compared to 2009. The basic food items, as mentioned above are available to 93 percent of the sample households and that too in sufficient quantity to meet the hunger. Given the rise in availability and sufficiency around 77 percent of the households were able to generate surplus from the available food items. By surplus we mean the food items (mostly rice, dal, wheat, potato) that could have been saved for future consumption or sale in the market after keeping aside the amount needed for the household's consumption.

Table 7: Availability of Food Items to Households (in Percent)

Heads <i>Year of Consumption</i>	Availability of Food Items		Sufficiency of Food Items to meet Hunger		Surplus Food Items after the Needed consumption	
	2009	2019	2009	2019	2009	2019
Percentage of respondent who agreed completely	88	93	86	92	73	77
Percentage of respondent who agreed partially	27	22	29	23	42	38

Source: Primary data collected during the field survey, July 2019.

1.5.9. Education and health

Among all the respondents majority of them are either illiterate or can sign their names. The second generation from the households are more inclined towards getting education. The local primary and secondary schools play a major role in educating the people of these areas.

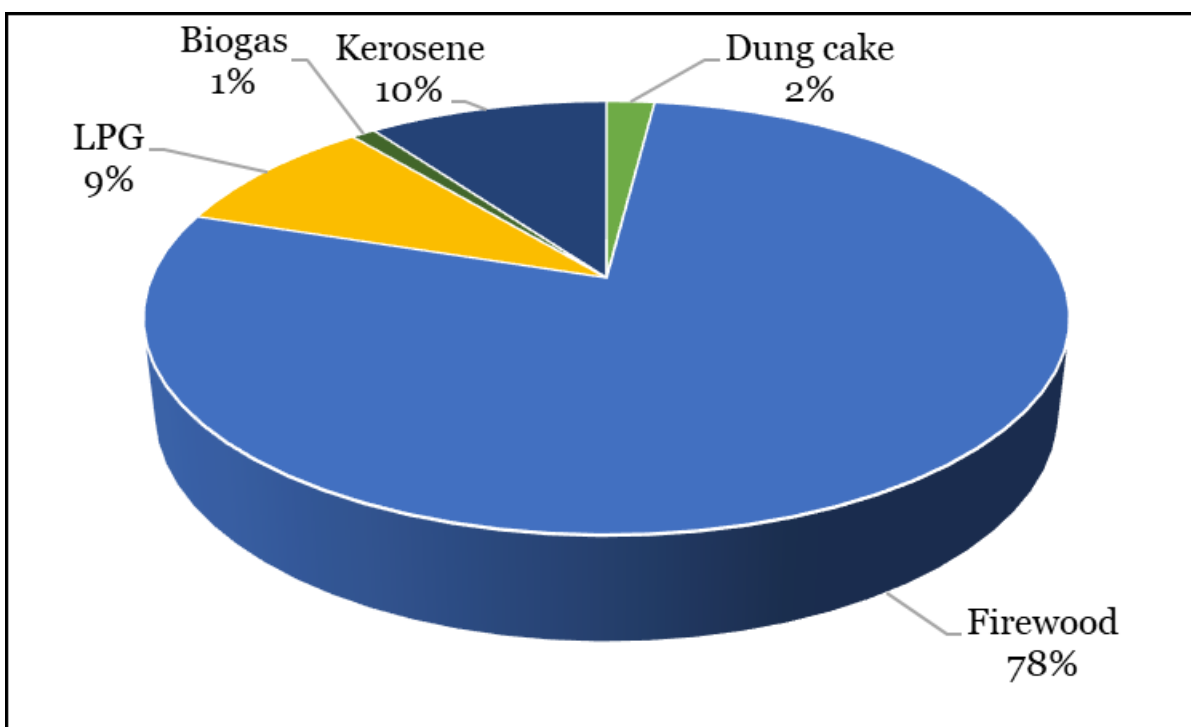
In terms of health issues, not much was observed or reported. Except water borne diseases and fever, nothing was reported to us. Majority of the population depends on local primary health centre for health problems and in some places people have to travel more than 20 km to avail better health care facilities.



1.5.10. Environment

Figure 12 provides us with the data related to the primary source of energy for cooking and the related percentage distribution of households using them. The survey found that there are five main sources of energy for cooking. They are dung cake, kerosene, firewood, LPG and biogas. A relevant question was why at all they are not using LPG despite having access to the same, instead using firewood as the preferred option of primary energy source for cooking? It was reported that there is a rise in the availability and accessibility of LPGs after the Ujjwala scheme promoted by the Government of India and it is provided in a phased manner to the households. However, the using firewood is much easier option compared to LPG both in terms of costs and availability. They collect the firewood round the year. It is available either in the form of dry broken branches of the existing trees around the Wadi or elsewhere or alike branches in the nearby forests area. It is kept in open during the monsoon and after it gets dried up, they are used for cooking. As evident from the table below, very few families have the biogas plant and the propensity to use it as a primary source of energy for cooking is also very less.

Figure 12: Primary energy source for cooking and households using it (in percent)



Source: Primary data collected during the field survey, July 2019.

Having said these, it is also to be mentioned that though firewood is the preferred option for using it as a source of energy for cooking, the respondents categorically mentioned that they don't disturb the branches that are there in the tree. It is only the dead branches that are available are used as firewood. The other preferred option after firewood is kerosene. However, it is also used jointly along with firewood for cooking.



Around 48 percent of the sample households have electricity in their households and use it as the primary source of energy to light their houses. Rest use either candle or kerosene as the primary source of energy to light their houses. During 2009 hardly any of the household had any access to electricity in these areas.

It was observed that some of the locally trained farmers are active and has undertaken poverty eradication and sustainable development initiatives, in a manner which, not only improved



the economic and social condition of their family, but also transformed the resource utilization pattern to more sustainable one. To elaborate, the primary objective was to prevent soil erosion, increase soil moisture, raise ground water level, conserve and increase the biomass cover of the area. Such practices within the Wadi or elsewhere, if successful, had a high chance of better productivity of the land, ensure availability of water for protective irrigation and drinking, increase availability of fodder, fuel and fiber, encourage adopting new cropping patterns, etc.

As a part of these initiatives it was observed that almost all sample Wadi's had farm bunds, waterways, farm ponds, buried clay sprinkler pots, continuous contour trenches (CCT). The farm ponds are usually jointly owned by group of farmers.



True, the introduction of fruit and forestry trees on waste land and increased availability of irrigation. Irrigation was further encouraged by the use of CCT. farm ponds, buried earthen sprinklers, group wells and has resulted in increased cropping intensity. To avoid the moral hazard problem, the PIA asked the farmers to contribute during the construction of the wells. Trees were planted in the border areas of the Wadi's to reduce soil erosion. Production of vermi-compost was visible in around 2 percent of the sample households. The use of organic fertilizers proved to be less costly compared to the chemical fertilizers. The extent of such savings, as reported, was within the range of 15 percent to 25 percent.

As mentioned earlier that as on 2019, the survival rate for both Cashew and Mango trees are 37.48 percent and 49.46 percent respectively. Therefore, no doubt that the massive tree plantation in the Wadi and adjoining areas during the implementation of the TDF programme were expected to appropriate significant quantities of Carbon as well as help in controlling soil erosion and hence mitigate climate change. However, the low survival rate of the trees must have contributed to a much lower extent than expected. Calculating the degree of degree of such contribution is beyond the scope of the current study. Overall, the greenery is visible only during the monsoons.

One of the traditional practice followed by the tribal farmers is to burn the field after the cultivation of one crop and prior to rowing the seeds for the next. The PIA should take efforts to convince the farmers to avoid such practices as it kills the good bacteria and insects that might actually help to gain better fertility.

1.5.11. Role of the PIA

Considering the remoteness of the areas in concern and the socio-economic strata of the target stakeholders, the period before the implementation of the project was significant in creating an acceptance and clarity about the project among its stakeholders, that is, the poor tribal families. Indeed, the PIA's focused communication during this phase in terms of the clarification of the TDF project's mission, vision and goal, strengthening the operational plan for the project, and creating a favorable climate towards the project among stakeholders is noteworthy.

The staffing pattern and the roles of the respective staffs had no deviation as was proposed in the DPR. It may be added that the lands for the Wadi programme was wisely selected. Most of the lands selected for the Wadi programme were lands falling under the slopes and are with poor soil cover, yet consisting of soft- murum- a feature believed to be good for fruit plantation. Local youths were trained as Wadi Vikas Sevaks (WVS). This is certainly a move to empowerment through their active engagement in the project activities. WVS's were trained to provide further technical support to the farmers .The Plantation of mango, cashew, etc. were done during the onset of monsoon under close supervision of the WVS.

The other major contribution of the PIA was to make a bridge between the poor tribal farmers and formal lending institutions. Though all the sample household have their bank accounts as on date and it may be an outcome of the central governments schemes and alike, but the role of the PIA in bridging the gap between the stakeholders cannot be ignored. The biggest beneficiary of this effort are the members of the SHGs- the women. The formation of the FPO also reinstalled the faith on using organic fertilizers on one hand and save their hard earned money on the other.

Having said these, it was felt during the group discussions with the FPO members and the related stakeholders of this Wadi programme that the FPO face some major constraints in the form of skill gap, especially in terms of agribusiness management and proper financial planning. Given the fact that the members of the FPOs are mainly poor farmers so they genuinely lack the seed capital to initiate fresh business. The limited capacity of the FPO to promote agencies for extending the much needed

handholding in the initial days clubbed with poor or no access to the infrastructure and absence of a supply chain, the very idea of forming the FPO is at stake.

1.6. *Case Studies*

Mr. Sunil Pandurang Lande has made much more progress as compared to other farmers in his village. He began farming only after the TDF was implemented and earlier he was working in a private company. This has benefitted him in staying close to his family and not having to travel back and forth to big towns and cities looking for work. Through the TDF he has successfully set up a borewell whose current valuation is almost Rs. 70,000. The other remarkable feature of this farm is, it has made the family completely sustainable as almost all the produce is sourced from their own farm. Mr. Sunil cultivates a multitude of crops like mangoes (100 trees), potatoes, green leafy vegetables, onions, pomegranates and so on. He also owns strong cattle that he maintains very well – 4 buffaloes, 2 bullocks and 3 calves. He regularly provides them with vaccinations and medicines. Mr. Sunil has also set up a fully functional bio-gas plant in his backyard with 75% contribution from Lupin and 25% of it by himself. Ever since adopting the TDF program, Mr Sunil has made tremendous progress economically. He has transitioned from a kuccha house to a pucca house and now owns 2 cars and motorcycles.

Mr. Lakshaman Mali, 55 years farmer belongs to Kopre village. He has three members in his family including wife and his son. Primarily he is a farmer. Since earning from farming was not enough to meet his daily needs, he used to work as daily wage earner in nearby places like Junnar, Ottur, etc. He has received manual hand sprayer from Agriculture Department by contributing 400/- on his own. There are Hirda trees in his farm, and last year he has earned Rs.2000 by selling hirda. He owns 5 Acre of land out of which 2 acre is barren. Like most of the farmers, his land also depend on rain water and he grows only paddy in rainy season. If water availability is more or surplus water can be stored, he grows wheat and Bajra. Majority of the produce is used for self-consumption. He has received 25 mango plants and out of which 7 are surviving as on 2019. He has also received one plastic barrel from the PIA free of cost. Villagers have to travel to Otur (which is 20km from their village) for better medical facilities.

Mr. Murlidhar Phonaji Ghutte, 35 years, primarily a farmer. He belongs to Devle village. He has eight members in his family. He owns 5 acre of land out of which 1 acre is barren land. Due to heavy dependence on rain, he grows only paddy in the rainy season. If and only if water is available post the monsoons, he considers growing wheat and Bajra. The entire produce is used mainly for self-consumption. In the year 2010, he has established Wadi on his one acre land. He was provided with 30 mango and 20 cashew nut saplings under the Wadi project. Unfortunately 10 cashew plants could not survive due to unfavorable environmental condition. He has constructed Jalkund for storing the water for watering the plant. He has also received solar lamp by contributing Rs. 100. He has earned Rs. 3000/- this year by selling the surplus mango after consumption by his family and relatives.

Mr. Dunda Hema Bhare, 45 years , is a farmer living with his wife in Muthalne village. His son has migrated to Pune in expectation of better opportunities and higher income. He owns 10 acre of land out of which 6 acre is barren land. He grows paddy in his farm in rainy season and wheat in rabi season. The produce is used for self consumption. He has received LPG gas from Ujjawala Yojana by contributing Rs. 500. He established Wadi in 2010 in his farm. 15 cashew nut plants and 35 mango plants along with some organic pesticides was provided to him under the Wadi project. As on date, only 6 cashew tree and 15 mango plants are surviving. He has also received 25 earthen pots as sprinklers for irrigation and Rs. 1000/- as labor charge. He has earned Rs. 2500/- this year by selling excess mango after consumption by his family and relatives.

Mr. Jayram Luma Muthe, 60 years, is a farmer from Kopre village. He has four members in his family. He lives in kaccha house. He owns 2 acre of land out of which one acre is barren land. Agriculture is the main occupation of this family but only farming is not helpful to meet his daily hood so he use to go for labor work also along with his son. He has 7 trees of hirda in his farm; by selling its seeds, he could earn 6000 in last year. He has received LPG gas from forest department by contributing Rs. 2000 by his own. He established WADI in 2010 in his farm. 20 cashew nut plants and 30 mango pants along with some pesticides has been provided to him under Wadi project out of which 9 cashew's and 15 mango plants are surviving. He has also received solar lamp by contributing Rs. 250 by his own. But, solar lamp is unable to work now. The production mangoes uses for family consumption only.

Mrs. Vimal Dagdu Landge (50) is a widow and a landless beneficiary from KeWadi. She received a buffalo as a part of the TDF programme. Now she has 3 buffaloes. In the 1980s her land was acquired by government when the Mankidoh dam in 1980s. She contributed 50 percent of the total cost while purchasing the buffalo and also paid the receipt amount. Now she has taken insurance for the buffalos. She is facing hardship to buy the fodders for the buffalos.

Dhanaji Bagu Nagare from Undekhadak joined the Wadi programme in 2009 and he is a beneficiary under the 1 acre category. He had received 50 plants of mangoes and 10 plants of cashews. In 2018 he sold mangoes in Junnar market and earned Rs. 35000. He also received plastic barrels from the PIA.

Daji Dhondiba Karbhal of Taleran joined the programme in 2010. He is a member of the Village Planning Committee. He has received 20 plants of mangoes. He has good source of water in his farm and thus the production in his Wadi was quite good. He also received 2 plastic barrels and earthen sprinklers from the PIA.

Mr. Soma Dharma Ghode of Taleran joined the Wadi programme during 2009. Last year he has earned close to Rs.10000 by selling mangoes in Junnar market. In 2010 with the help of the PIA a group of farmers in Taleran constructed a well. The surplus water after household consumption is used to cultivate rice, wheat, paddy and alike. Mr. Soma earned around Rs.25000 in the last season by selling the agri-products produced in his field. Earlier, he used to go to nearby towns as daily wage earner, however, now he prefers to concentrate more in agricultural activities in his own field. He is planning to build a new pucca house for his family.

Mrs Suman Baban Karbhal (56) from Taleran bought buffalos by taking loan from the PIA. She started a dairy in the last one year she has earned around Rs.1 lakh from this venture. Incentivized from this benefit 16 other families are now involved in the dairy business as a subsidiary source of income. PIA provided loan to these families through the TDF. Now this group has also started milk collection center in their habitation and deployed a youth to collect the milk in their habitation and sell it to dairy.

1.7. *Preparation of the Mobile App*

One of the primary task assigned to the study team was to prepare a mobile app which can be used for data collection- both offline and online. The study team took the help of the Symbiosis Institute of Computer Studies and Research (SICSR), Pune.

Preparing the mobile application- ‘Sanjaya’

One of the other tasks rendered upon the study team was to prepare a mobile application that would help future researchers to tap the field data easily. For the same the study team took the help of the Symbiosis Institute of Computer Studies and Research (SICSR), Pune. The said application has been designed to capture data both in an online as well as offline mode. The best part of this application is, whenever, it comes in contact with internet, automatically the data gets transferred to the server and thus makes room for an even better analysis.

To put it formally, the prime objective of this mobile applications is three fold:

- I. Automate the process of data collection to study the impact of NABARD’s Tribal Development Programme⁹.
- II. Replace data entry with data capturing mechanisms to prevent error rates
- III. Remove the overhead of paperwork involved during the survey process.

The said application is hereafter named as ‘Sanjaya’¹⁰.

To enable Sanjaya the user needs, preferably a Tablet with Android OS with a RAM of 4 GB to 8 GB. However, the application can as well be enabled using a smart phone with similar specifications as well.

⁹ It must be mentioned at this point that the said application can be customized as per the requirement and can be applied for any other study that conducts field survey through a properly designed questionnaire.

¹⁰ As per the epic poem Mahabharata, Sanjaya had the gift of seeing events at a distance (divya-drishti) right in front of him, granted by the sage Vyasa. He used to narrate to King Dhritarashtra the action in the climactic battle of Kurukshetra, which includes the Bhagavad Gita. Similar to Sanjaya, the current mobile application can actually narrate data on a real time basis to a distant server provided there is internet. Thus, the name ‘Sanjaya’ seems apt as a name for the current mobile application.

Sanjaya can be configured and made operational with Kitkat (Android 19) which is supported on all latest android versions of smart phones.

Needless to mention that the surveyors may be exposed to remote regions¹¹ with little or no internet access to directly load data into the central Google Sheets database. Hence, all the data collected by the surveyor will be first loaded into the local database and later whenever surveyor has access to internet, the data can be written to sheets.

Libraries used: (present in **build.gradle** inside app module)

- Core android libraries: 'com.android.support.constraint:constraint-layout:1.1.3'com.android.support:appcompat-v7:26.0.1'

- Google Libraries for using Google Sheets by application:'com.google.android.gms:play-services-auth:10.2.6'

('com.google.api-client:google-api-client-android:1.25.0'){exclude group:
'org.apache.httpcomponents'}

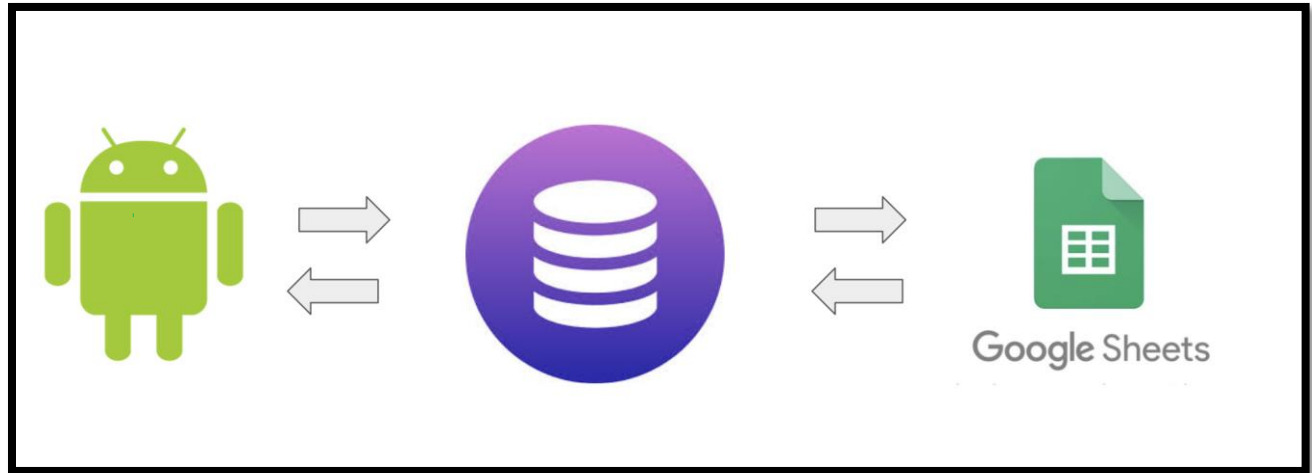
('com.google.apis:google-api-services-sheets:v4-rev581-1.25.0') {exclude group:
'org.apache.httpcomponents'}

- External library for managing permissions: 'pub.devrel:easypermissions:0.3.0'

Package for implementing SQLite : android.database.sqlite

¹¹ In fact the field survey for the current study was conducted in remote tribal areas with no mobile or internet connectivity.

Figure 13: Architecture of the TDF Survey App 'Sanjaya'

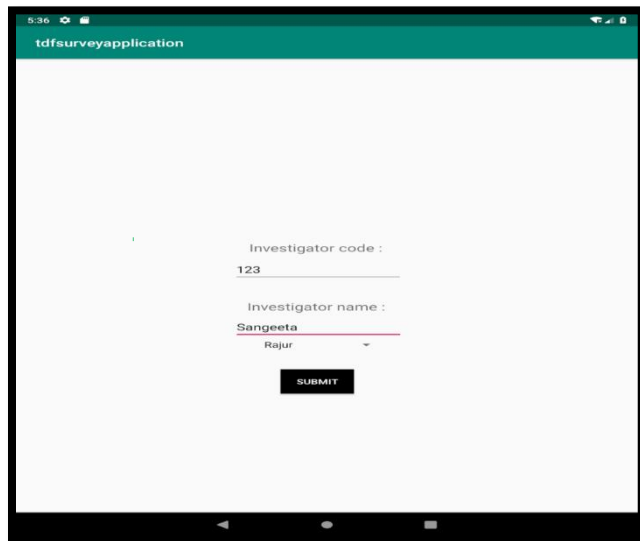


We understand that the surveyors would be exposed to regions with little or no internet access to directly load data into the central Google Sheets database. Hence, all the data collected by the surveyor is first loaded into the SQLite database of the device and later whenever surveyor has access to internet, the data can be batch written to Google sheets.

Application Flow

Here an activity has been created for every section of the original survey form. Sanjaya starts with the login screen wherein the surveyor has to enter his/her unique investigator code, name and select village for which he/she is surveying at (**Exhibit 1**). The date of survey is also captured from the system on submission of the login form which is shared as a common entry for all respondents for the day along with surveyor name, code, village.

Exhibit 1: Login Screen



tdfsurveyapplication

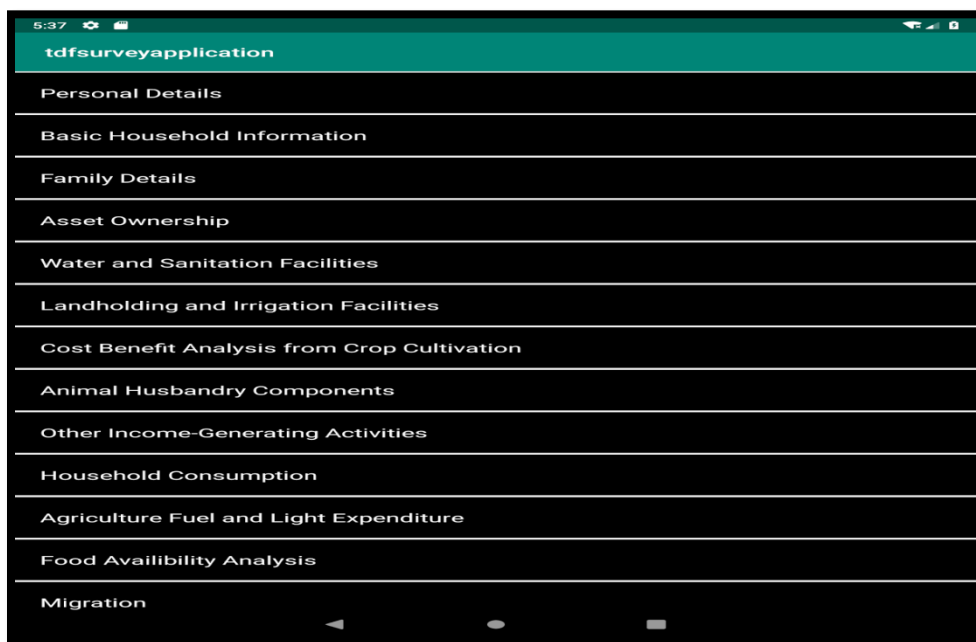
Investigator code :
123

Investigator name :
Sangeeta
Rajur

SUBMIT

After submitting this form the values of the fields are stored in SQLite database. The control moves to ‘Section Activity’ (**Exhibit 2**) which is a collection of the various sections from the original survey form. The surveyor first must fill the ‘Personal Details’ section of the respondent to generate the respondent’s unique identification number and then is free to choose any order for filling up the rest of the sections.

Exhibit 2: Section Activity



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Personal Details

Basic Household Information

Family Details

Asset Ownership

Water and Sanitation Facilities

Landholding and Irrigation Facilities

Cost Benefit Analysis from Crop Cultivation

Animal Husbandry Components

Other Income-Generating Activities

Household Consumption

Agriculture Fuel and Light Expenditure

Food Availability Analysis

Migration

Exhibit 3 provides us with a glimpse of an already filled personal details section. Assuming the village selected was Rajur, name of Surveyor being Sangeeta and this being the first respondent of this surveyor

in Rajur, the following UID is generated: **RASA1**. This key will play a crucial role in linking the section wise tables in SQLite thus allowing us to merge all the data and supplying it to Google Sheets.

Exhibit 3: Sample Screen for Personal Details

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Personal Details

Respondent's name:

Gender: ☐ Male ☒ Female

Year of Joining:

Contact Number (Mobile):

☒ Beneficiary

NEXT

Exhibit 4: Multi-select column

fields- Screen 1

tdfsurveyapplication

Choose owned farm assets:

- ☐ Tractor without plougher
- ☐ Electric Pump
- ☐ Trolley
- ☐ Manual Sprayer
- ☒ Power Sprayer
- ☒ Open Well
- ☐ Tube Well
- ☐ Cattle Shed
- ☐ Farm Building
- ☐ Bullock Cart
- ☐ Fodder Chopper
- ☐ Electric Pump
- ☐ Diesel Pump
- ☐ Plougher Equipments Wooden
- ☐ Plougher Iron Equipments

SUBMIT

Exhibit 5:Multi-select column fields-Screen 2

tdfsurveyapplication

Farm Asset Ownership Details

Power Sprayer

Before TDF

I/J J

No. 123

After TDF

I/J J

No. 123

Current Value in Rs 10000

SUBMIT

In case of multi-select column fields, the surveyor must choose the applicable field (**Exhibit 4**) for respondent and thus would be taken to a screen wherein s/he could fill the rest of the details of the selected fields (**Exhibit 5**).

Exhibit 6:Multi-select column -Others-Screen 1

tdfsurveyapplication

Choose owned Animal Husbandry Components

☐ Milk

☐ Meat

☐ Eggs

☐ Manure

☐ Manure

☐ Dung Cake

☒ Animal Sale

☒ Others

Component1,Component2,Component3

SUBMIT

Component3

q w e r t y u i o p

a s d f g h j k l

z x c v b n m ! ?

?123

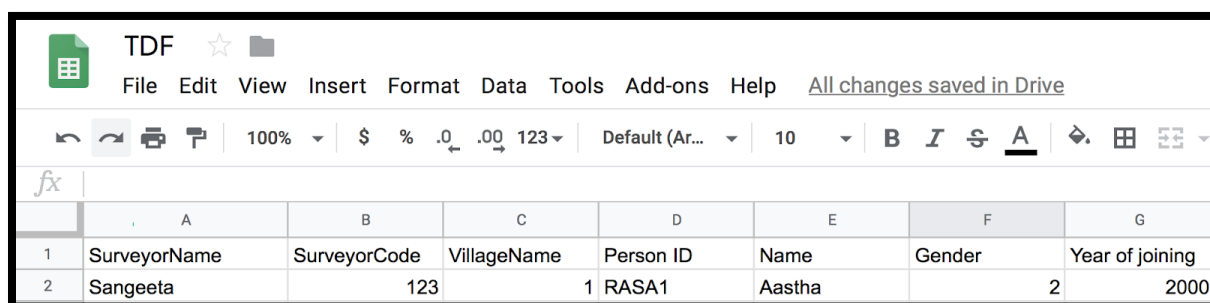
Exhibit 7: Multi-select column -Others-Screen 2

The screenshot shows a mobile application interface titled 'Animal Husbandry Components'. At the top, there is a teal header bar with the text 'tdfsurveyapplication'. Below the header, the title 'Animal Husbandry Components' is displayed in bold. The form is divided into two sections: 'Before TDF' and 'After TDF'. Each section contains two text input fields: 'Own Consumption' and 'For sell'. The 'Own Consumption' field in the 'Before TDF' section has a red underline. At the bottom of the form, there is a black button with the text 'SUBMIT' in white. The status bar at the top of the phone shows the time as 5:57, LTE signal, and battery level.

Further, in certain cases, for instance, animal husbandry components, fruits, vegetables and alike, if the values aren't in the provided list (**Exhibit 6**), the surveyor has the option to add those field names in a text field as comma separated values (**Exhibit 7**).

All the respondent data is stored on the local SQLite database of the device till the surveyor clicks the 'Add to Google Sheets' button in a network zone. To simplify, once the required data has been entered, immediately the said data would be transferred to the server and the designated google sheet would capture all the information on a real time basis as soon as the device is in a network zone. This will upload all the current data on device to the centralized google sheets which can be accessed by all other surveyors for further assessment. Below is a demo snap from the central database stored in Google Sheets (**Exhibit 8**).

Exhibit 8: Sample Google sheet for data storage



	A	B	C	D	E	F	G
1	SurveyorName	SurveyorCode	VillageName	Person ID	Name	Gender	Year of joining
2	Sangeeta	123	1	RASA1	Aastha	2	2000

1.8. *Observation*

Indeed, the 'wadi project' has succeeded to gain a sense of stakeholdership among the tribal communities. There are few major aspects that should be noted for an even better outcome of such projects.

There is a dire need to take up a massive initiative for watershed management. We must remember that watershed management is not merely an anti-erosional and anti-runoff approach. It is also a comprehensive, integrated approach of land and water resources management. Therefore, there is a need for a master plan that would first define the run-off areas, the infiltration/detention and storage areas and adopt appropriate strategies for them. The scarcity of water is a major constraint for all agriculture related activities in this region. Steps have to be taken for provisioning of water for irrigation and drinking purposes. Here, water harvesting structures are required to be built for community use.

Even if water is available during the monsoons, the typical gradient of the landmass does not allow storage of water. As a result, apart from natural depreciation, theft, the survival rate of the mango trees, cashew, etc. are very low. Therefore, the choice of providing items that need massive water for their growth, perhaps, was not a good choice. Rather, items like goats, buffalo, hatchery, could have been more productive and usable for the farmers in concern. Further, in terms of trees, the farmers were more inclined towards producing hirda or bamboo rather than mango or cashew. The poor or simply absence of cold storage is a major hurdle towards commercially using the produce as fruits like mango are perishable in nature. Cashew, on the other hand, needs improved techniques to make it usable, else it is of little use. Compared to these two, production of bamboo or Hirda is beneficial. They can be stored for

much a longer period compared to mangos. The other option is to concentrate on livestock which are easily salable and need less of water to manage them.

The formation of the SHGs and the FPOs proved to be beneficial. The propensity of the women members to earn livelihood parallel to their male counterparts encouraged others who were hitherto not part of the SHG to associate themselves with the SHGs. The FPOs also helped the farmers by providing them the required training in terms of using technology, organic fertilizers, exposure visits and alike. Having said these, since most of the women are illiterate and therefore, it becomes difficult for them to handle numbers etc., some mechanism should be evolved for easy handling of group accounts etc. There is a clear need for a market driven skills and vocational inputs. Also, mechanisms should be designed to reduce the gap in enterprising / trading / business.

The tribal communities have limited or no information on various programs and schemes that have been launched by the state or federal governments for their development and wellbeing. Information dissemination of project aspects such as project components, basic principles, non- negotiable, roles and responsibilities of different stakeholders, are critical to elicit interest and participation of the tribal communities.

It was observed that due to very poor connectivity, absence of proper storage, the farmers are demotivated to sale their produce in the nearby markets. They mostly use the produce from the Wadi's for consumption purpose. Unless the produce from the Wadi and/or the field are sold for income generation, it may be difficult to give a 'big push' to the community and uplift their economic status. Further, most of the small and marginal farmers either do not have marketable surplus or are nor able to find proper market at the right time for their surplus produce. Attempt should be to cluster the activity for bunch of villages that result into production of goods, which can be marketed locally. One possible way out is to link them with producers companies (FPOs) by extending their outreach to all these villages. Backward and forward linkages for the poor and marginal farmers for timely supply of agri-input and production buy-back on a reasonable price.

Link road was reported as crucial especially for marketing the agriculture produce and dairy. Transport facilities improvement is required by public transport.

The PIA did take initiatives to promote the habit of clean drinking water in order to decrease the incidence of water borne diseases and a better health. For the same awareness campaign related to hygienic practices, chlorination of community drinking water sources are done. However, given the extent of pollutants and uncovered drinking water sources, the outcome of such initiatives seems doubtful.

Land development is a serious issue especially in the tribal areas. Improvement in land would increase productivity and hence income.. The hilly terrain and the location of the Wadi's are actually good for using bullocks or traditional ploughing methods. The possibility of using tractors or alike machine based ploughing methods may not be fruitful in these region, barring some selected fields.

Having said all these, given the dominant agriculture based livelihood it is of utmost importance that there should be enough rooms for rain water harvesting, especially during the monsoons. It has been observed during the first phase of the current project (which was undertaken during the summers) that the lands during the dry season the entire landscape gets dehydrated and only non-agriculture based activities are the sole source of life and livelihood. Therefore, with potential water harvesting options the conserved water will promote local climate change mitigation measures. This eventually will increase agricultural productivity in due course will lead to eradication of poverty along with the restoration of natural resources. To mention, in terms of ground water recharging, growth of forest vegetation, and supporting numerous flora and fauna. Needless to mention that such tasks for a meaning sustainable development deserves strong support from the government and corporate sectors.

1.9. Annexure**Questionnaire- Household Level**

UNIQUE
IDENTIFICATIONNUMBER

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0.1 Respondent's Name (नाव):

0.2 Gender (लिंग):

0.3 Village (गाव): _____

Beneficiary (B)/ Non-beneficiary (N) (लाभार्थी/गैरलाभार्थी) _____

0.4 Year of Joining (सहभागी होण्याच वर्ष): _____

0.5 Contact Numbers (संपर्क क्रमांक) : (M) _____

0.6 Date of Visit (भेटीचा दिवस) Day

Month Year

--	--

0.7 Investigator's Name (सर्वे करणाऱ्याच नाव) _____

0.8. Investigator Code (सर्वे करणाऱ्याचा कोड) _____

0.9 Contact No. (संपर्क क्रमांक) __

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1.9.1. Section 1: Basic Household Information

Section 1- BASIC HOUSEHOLD INFORMATION (Please circle the option, specify the option where mentioned only)								
भाग एक – कुटूंबाविषयी सर्वसामान्य माहिती								
1.1	What is your religion? (तुमचा धर्म कोणता आहे?)	Hindu (हिंदू).....1 Muslim (मुस्लिम)2 Christian (ख्रिश्चन).....3 Buddhist (बौद्ध).....4 Other (इतर) (specify)... 888 don't know/will not say (माहित नाही/सांगू शकत नाही).....999						
1.2	What is your caste?	SC (अनूसूचित जाती).....1 ST (अनूसूचित जमाती).....2..... OBC (इतर मागासवर्गीय).....3 OTHER (इतर)..... 888 WILL NOT SAY (सांगू शकत नाही).....999						
1.3	Name of the Tribe (जमातीचे नाव)	Bhil (भिल्ल)	Kathodi (काथोडी)	Koli Mahadev (कोळी महादेव)	Bhil Garasia (भिल्ल गरसिया)	Katkari (काटकरी)	Dongar Koli (डोंगर कोळी)	Other (इतर)
1.4	What is the total annual income of your Household (Gross)? तुमचे एकूण वार्षिक उत्पन्न किती आहे (ग्रोस)?	<25000 1 25001-500002 50001 – 1000003 100001-1500004 150001 – 250000.....5 250001-500000.....6 >500000...7						
1.5	How many people live in this household ¹ ? (घरामध्ये किती लोक राहतात?)	_____						
1.6	Does any household member have a MGNREGA card? (किती सदस्यांकडे मनरेगा कार्ड आहे?)	Yes (हो).....1 No (नाही)2						
	If yes who all (जर हो असेल तर कोण?)	Male(पुरुष): _____, Female (स्त्रिया): _____						
1.7	Does the household have a Ration Card? (राशन कार्ड आहे का?)	Yes (हो).....1 <input type="checkbox"/> 1.8 No(नाही).....2- <input type="checkbox"/> 1.9						

¹ No of members sharing the common kitchen (सामायिक स्वयंपाकघर असलेले सदस्य)

1.8	What is the type of Ration Card possessed by the household? (राशन कार्ड कोणत्या प्रकारचे आहे?)	APL (दारिद्र्य रेषेवरील).....1 BPL (दारिद्र्य रेषेवरील).....2 Antyodaya (अन्तोदया)3 Priority Household (प्राधान्य कुटूंब).....4, others(specify) (इतर)..... 5	
1.9	How many members in the household have Adhaar card? (कुटूंबातील किती सदस्यांकडे आधार कार्ड आहे?)	_____	
1.10	Electricity	At House (घरी)	

	(विजसुविधा) Yes (हो).....1 No (नाही).....0	At Farm (शेतामध्ये)	
		Before getting TDF (आविनि च्या अगोदर)	After getting TDF (आविनि च्या नंतर)
1.11	Do you have many members who are part of the SHG?		
1.12	Number of members of the household who are member of SHG (बचत गटामध्ये सहभागी असलेल्या कुटूंबसदस्यांची संख्या):		

1.9.2. Section 2: Family details

2	Section 2 : Family Details (कुटूंबावषया माहिती)				Before getting TDF (आविनि च्या अगोदर)		After getting TDF (आविनि च्या नंतर)	
	Name (नाव)	Age (वय)	Gender (लिंग)	Education (शिक्षण)	Occupation (व्यवसाय)	Income (Rs.) (उत्पन्न)	Occupation (व्यवसाय)	Income (Rs.) (उत्पन्न)
	1.							
	2.							
	3.							
	4.							
	5.							
		Before getting TDF (आविनि च्या अगोदर)			After getting TDF (आविनि च्या नंतर)			
2.1	Occupation of the Beneficiary (व्यवसाय)	Major: (मुख्य)		Subsidiary: (दुय्यम)	Major: (मुख्य)		Subsidiary: (दुय्यम)	

1.9.3. Section 3: Understanding socio-economic benefits: Asset Ownership**Section 3 - Understanding socio-economic benefits: ASSET OWNERSHIP** (सामाजिक आणि आर्थिक लाभ: मालमत्ता आणि मालकी हक्क)

SI No.	FARM ASSETS (शेतकी मालमत्ता)	Number		Number		Current Value in RS. (वर्तमान किंमत)	SI NO	LIVESTOCK (पशुसंवर्धन)	Before TDF (आविनि च्या अगोदर)	After TDF (आविनि च्या नंतर)	Current Value in RS. (वर्तमान किंमत)
		Before TDF (I/J) (आविनि च्या अगोदर)	No.	After TDF (I/J) (आविनि च्या नंतर)	No.						
		I/J (व/स)	No. (नं.)	I/J (व/स)	No. (नं.)						
1	Tractor without Plougher (ट्रक्टर)						1	Cow (गाई (देशी)) Calf			
2	Tractor with Plougher						2	Cow (Cross-bred) (गाई (जसी))			
3	Trolley (टोली)						3	Buffalo (म्हस)			
4	Manual sprayer (हात फवारणी)						4	Sheep (शेळी)			
5	Power sprayer (फवारणी)						5	Goat (मेंढी)			
6	Open Well (विहीर)						6	Poultry (पोल्ट्री)			
							7	Bullock			
7	Tube Well (बोअरवेल)						8	Others (इतर)			
8	Cattle Shed (गाई गुरे निवार)						9	OTHER ASSETS Farm Pond, etc (इतर मालमत्ता, शेततळ इत्यादी)			
9	Farm Building (माळघर/साठवणूक घर)						10	Type of house (Codes) (घराचा प्रकार (कोड))			

10	Bullock Cart (बैलगाडी)							OTHER ASSETS (इतर मालमत्ता)			
11	Fodder Chopper (चारा तोडणीयंत्र)						1	No. of rooms (खोलींची संख्या)			
12	Electric Pump (विद्युत पंप)						2	No. of TV owned (टी.व्ही. संख्या)			
13	Diesel Pump (डिझेल पंप)						3	No. of Mobile phones (मोबाईल फोन ची संख्या)			
14	Plougher equipments wooden (लाकडी नांगर आणि सामान)						4	Cycle (साईकल)			
								Motor Cycle (मोटर साईकल)			
15	Plougher iron equipments (लोखंडी नांगर आणि सामान)							Car (कार)			
								Refrigerator (फ्रिज)			

Codes for Type of Building (Houses, Cattle Shade, please ask and note): Kachha—1, Pucca—2, Semi-pucca---3, Others---4

I = Individual (वैयक्तिक), J=Joint (सामुहिक)

***If Joint (J) ask the number of contributors.**

Water & Sanitation facilities

		Before getting the TDF (आविनि च्या अगोदर)	After getting the TDF (आविनि च्या नंतर)
1	Facility of drinking water in house (पिण्याच्या पाण्याची सुविधा)	A. Yes (हो) B. No (नाही)	A. Yes (हो) B. No (नाही)
2	If Yes, details (जर हो तर)	A. Tap water (नळाचे पाणी) B. Hand-pump (हात पंप) C. Own well (स्वताची विहीर) D. Bore well (बोअर वेल) E. Others (please specify) (इतर)	A. Tap water (नळाचे पाणी) B. Hand-pump (हात पंप) C. Own well (स्वताची विहीर) D. Bore well (बोअर वेल) E. Others (please specify) (इतर)
3	If No, how far is the water source? (जर नाही तर पाण्याचा स्त्रोत किती दूर आहे?)	A. 0-1Km B. 2 km C. 3 km D. Others (please specify)	A. 0-1Km B. 2 km C. 3 km D. Others (please specify)
4	Who goes to fetch the water? Male.....1 Female.....2		
5	Toilet facility in the house (टॉयलेट सुविधा)	A. Yes (हो); Duration of use in months _____ B. No (नाही) (वापरण्याचा कालावधी)	A. Yes (हो); Duration of use in months _____ B. No (नाही) (वापरण्याचा कालावधी)

1.9.4. Section 4: Information regarding land-holding of the household and irrigation facilities

Section 4 - Information regarding land-holding of the household and irrigation facilities (जमीन आणि सिंचनावषया माहिती)						
Sl. No.	Land Holding (जमीन)	Before TDF (Area in acre) (आविनि च्या अगोदर)		After TDF (area in Acre) (during 2017-18) (आविनि च्या नंतर)		Tentative value of the land (in Rs.) जमिनीची किंमत (ढोबळमानाने)
		Y/N	Unit	Y/N	Unit	
1	Owned land (स्वताच्या मालकीची जमीन)					
2	Leased-in Land (भाड्याने घेतलेली जमीन)					
3	Leased-out Land (भाड्याने दिलेली जमीन)					
4	Total Land Possessed (एकूण जमीन)					
5	Cultivated Area (लागवडीखालची जमीन)					
6	Irrigated Area (बागायत जमीन (कालवा))					
7	Barren Land (acres) Land which cannot be brought under cultivation (पडीक/ओसाड/वर्कस जमीन)					
8	Pasture Grazing land (acres) (कुरण)					

R= Rented, O=Owned

1.9.5. Section 5: Gross Cropped Area, value, yield, revenue and cost of cultivation of various crops for cultivation

Section – 5 Gross Cropped Area, value, yield, revenue and cost of cultivation of various crops for cultivation¹² [(लागवडीखालील जमीन, पिकांचे मुल्य, उत्पन्न, उत्पादन आणि खर्च)]

Sl. No	Crop	BEORE TDF (आविनि च्या अगोदर)							AFTER TDF (आविनि च्या नंतर)						
		Cultivated Area (in Acres) (1) (लागवडी खालील जमीन)	Irrigated Area (in Acres) (2) (बागायत जमीन)	Production (Qtls) (3) (उत्पादन)	Own Consumption	Sold Quantity	Unit Price	Paid Out Costs of Cultivation (Rs.) (7) (एकूण लागवडीचा खर्च)	Cultivated Area (in Acres) (8) (लागवडी खालील जमीन)	Irrigated Area (in Acres) (9) (बागायत जमीन)	Production (Qtls) (10) (उत्पादन)	Own Consumption	Sold Quantity	Unit Price	Paid Out Costs of Cultivation (Rs.) (14) (एकूण लागवडीचा खर्च)
1	Paddy (भात)														
2	Wheat (गहू)														
3	Gram (हरभरा)														
4	Bajara (बाजरी)														
5	Maize (मका)														
6	Mango (अंबे)														
7	Cashew (काजू)														

¹²Check if Cultivated area > =< irrigated area as mentioned in previous table; Also intercropping could be done. Kindly make a note of it.

8	Flowers (फूले)														
9	Fruit (फळे)														
10	Vegetable (भाज्या)														
11	Others (इतर)														

1.9.6. Section 6; Animal husbandry components

Section – 6 Animal husbandry components (पशूसंवर्धन)					
Sl. No.	Particulars of items (वस्तु)	Income from the item through animal husbandry (in Rs.) (पशूसंवर्धनातून उत्पन्न)			
		Before TDF (आविर्गने च्या अगोदर)		After TDF (आविर्गने च्या नंतर)	
		Own Consumption (स्वताच्या वापरासाठी)	For Sell (विक्रीसाठी)	Own Consumption (स्वताच्या वापरासाठी)	For Sell (विक्रीसाठी)
1.	Milk (दूध)				
2.	Meat (मांस)				
3.	Eggs (अंडा)				
4.	Manure (खत)				
5.	Dung cake (शण्याच्या गाऱ्या)				
6.	Animal sale (पशू विक्री)				

7.	Others (इतर)				
	TOTAL (एकूण)				

1.9.7. Section 7: Other income generating activities

Section – 7 Other Income generating activities (इतर उत्पन्न)

	BEFORE TDF (आविनि च्या अगोदर)		AFTER TDF (आविनि च्या नंतर)	
	Earning from activities (in Rs.) (एकूण कमाई)	Paid -out cost (in Rs.) (एकूण खर्च)	Earning from activities (in Rs.) (एकूण कमाई)	Paid -out cost (in Rs.) (एकूण खर्च)
Sericulture (रेशीम उत्पादन)				
Agricultural Labour (शेतमजूर)				
Non-Agriculture Labour (मजूर (बिगरशेती))				
Forestry (Hirda) (वन उत्पादन (हिरडा))				
Fishing (मत्स्यपालन)				
	BEFORE TDF (आविनि च्या अगोदर)		AFTER TDF (आविनि च्या नंतर)	
	Earning from activities (in Rs.) (एकूण कमाई)	Paid -out cost (in Rs.) (एकूण खर्च)	Earning from activities (in Rs.) (एकूण कमाई)	Paid -out cost (in Rs.) (एकूण खर्च)
Government projects (Specify) (सरकारी कार्यक्रम) MGNREGA (मनरेगा) DBT (डायरेक्ट बनेफिट ट्रान्सफर) Duration of credit time Kisan Sanman Yojna (किसान सन्मान योजना)				

Loan waiver (कर्जमाफी)				
Other source of income (specify)..... (उत्पन्नाचे इतर स्त्रोत)				

1.9.8. Section 8: Information regarding household consumption

Section - 8 Information regarding household consumption (घरगुता वापराबद्दल (उपभागाबद्दल) माहिती)							
Please mention your family's average monthly intake of food items from the list given below							
Sl N o.	Item	Before getting TDF (आविनि च्या अगोदर)			After getting TDF (आविने च्या नंतर)		
		Frequency (Times per week)	Rs./Month	Sources (1-Own farm, 0-Market)	Frequency (Times per week)	Rs./Month	Sources (1-Own farm, 0-Market)
1.	Rice (भात)						
2.	Wheat (गहू)						
3.	Vegetable (भाज्या)						
4.	Pulses ((डाळी)						
5.	Fruits (फळ)						
6.	Milk (दूध)						
7.	Egg (अंडी)						
8.	Fish (मास)						
9.	Meat (मांस)						
10	Pan, tobacco & intoxicant (पान,						

	तंबाखू आणि तर)						
11	Fuel and light (इंधन आणि तर)						
Others (इतर)							
12	Medical (वैद्यकीय)						
13	Education (शिक्षण)						
14	Minor durable- type goods (किरकोळ टिकाऊ वस्तू)						
15	Entertainment & Conveyance (मनोरंजन आणि इतर)						
16	Rent (भाडे)						
17	Clothing (कपडे)						
18	Bedding etc. (बेड/बिछाना)						
19	Footwear (चपल्ला/पाद त्राणे)						
20	Durable goods (टिकाऊ वस्तू)						

1.9.9. Section 9: Expenditure for fuel and light for agriculture (Rs.)

Section – 9 Expenditure for fuel and light for agriculture (Rs.) (शतांसाठी इंधन आणि वज खज)		
	BEFORE TDF (आविनि च्या अगोदर)	AFTER TDF (आविनि च्या नंतर)
Expenditure on electricity (विज खर्च)		
Expenditure on diesel (डिझेल खर्च)		
Expenditure on other fuels for agriculture (इतर इंधन खर्च)		

1.9.10. Section 10: How true are the following statements in your case before and after getting TDF

Section -10 How true are the following statements in your case before and after getting TDF (खालील वाक्यांची आविनि च्या अगोदर आणि नंतरची सत्यता सांगा)							
1	Food (Rice/Wheat/Pulses) of any kind is available to us throughout the year (अन्न (भात/गहू/डाळ) वर्षभर उपलब्ध आहे)						
	Before getting TDF (आविनि च्या अगोदर)			After getting TDF (आविनि च्या नंतर)			
	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	
2	Sufficient quantity of food is available to my family to meet hunger (भूक भागवण्यासाठी पुरेशे अन्न उपलब्ध आहे)						
	Before getting TDF (आविनि च्या अगोदर)			After getting TDF (आविनि च्या नंतर)			
	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	
3	Surplus food can be available to my family members with my income (माझ्या उत्पन्नातून अधिक प्रमाणात अन्न माझ्या कुटूंबाला उपलब्ध करू शकतो.)						
	Before getting TDF (आविनि च्या अगोदर)			After getting TDF (आविनि च्या नंतर)			
	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	

4	I need to reduce my food consumption expenditure to meet other needs of the family (कुटूंबाच्या इतर गरजा पूर्ण करण्यासाठी मला जेवणावरचा खर्च कमी करावा लागतो.)						
	Before getting TDF (आविनि च्या अगोदर)			After getting TDF (आविनि च्या नंतर)			
	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	Fully True (पूर्ण सत्य)	Partially True (आंशिक सत्य)	Not True (असत्य)	

1.9.11. Section 11: Migration

Section – 11 Migration (स्थलांतर)				
1	Has any member of your family migrated in the last one to two years? (गेल्या एक ते दोन वर्षांत कुटूंबातील कोणत्याही सदस्याने स्थलांतर केले आहे का?)	Yes (हो)	No (नाही)	
2	If yes, how many of them migrated? (जर हो तर किती सदस्यांनी स्थलांतर केले आहे?)	1	2	3
3	Nature of Migration (स्थलांतराचे स्वरूप)	Seasonal (हंगामी)	Temporary (तात्पुरते)	Permanent (कायमस्वरूपी)
	Person 1			
	Person 2			
	Person 3			
4	Type of Migration (स्थलांतराचे प्रकार)	Inter- district (जिल्हा अंतर्गत)	Inter-state (आंतर राज्य)	Abroad (परदेशीय)
	Person 1			
	Person 2			
	Person 3			
	Yearly Income from such Migration (स्थलांतरातून वार्षिक उत्पन्न)	Before TDF (आविनि च्या अगोदर) After TDF (आविनि च्या नंतर)		
5	Push factors for such migration, if any, after getting TDF (पुष फॅक्टर)	Non availability of work (कामाची अनुपलब्धता) Poor working environment		

			(कामाचे अयोग्य वातावरण)
		Skilled work not available (कुशल कामाची अनुपलब्धता)	Others (Plz specify) (इतर)
6	Pull factors for migration if any, after getting TDF (पुल फॅक्टर)	Expectation of higher income (अधिक उत्पन्नाची अपेक्षा)	Expectation of better working environment (चांगल्या कामाची अपेक्षा)
		Expectation of better opportunities (चांगल्या संधीची उपलब्धता)	Others (Please specify) (इतर)

1.9.12. Section 12: Wage employment

Section – 12 Wage employment (वेतनाधारीत रोजगार)			
1	Wage employment in terms of man days (वेतनाधारित रोजगार)	Before getting TDF (आविने च्या अगोदर) No. of days: (एकूण दिवस)	After getting TDF (आविने च्या नंतर) No. of days (एकूण दिवस)
2	Value of wage employment / day (Rs.)	Before getting TDF (आविने च्या अगोदर) Value (Rs.) (मुल्य)	After getting TDF (आविने च्या नंतर) Value (Rs.) (मुल्य)

1.9.13. Section 13: Quality of life

Section – 13 Quality of life (जीवनमान स्थिती (गुणवत्ता))				
			Before getting TDF (आविने च्या अगोदर)	After getting TDF (आविने च्या नंतर)
3	Main road connectivity (रस्त्याची उपलब्धता)	To House (घर)	1. Kutchha (कच्चा)	2. Pucca (पक्का)
		To Farm (शेती)	1. Kutchha (कच्चा)	2. Pucca (पक्का)
4	Health problems (आरोग्याच्या समस्या)		Exists – Non existent (होते/नव्हते)	1. Increase (वाढ/घट) 2. Decrease
5	Depend on local primary health centre for most of our health problems (आरोग्याच्या समस्यासाठी स्थानिक आरोग्य केंद्रावर अवलंबन)		Agree (सहमत)	Disagree (असहमत)

6	Health care facilities are not within our expenditure limit and so we suffer a lot (आरोग्याच्या सुविधा आवाक्याच्या बाहेर आहेत आणि त्यामुळे समस्यांना सामोरे जावे लागते)	Agree (सहमत)	Disagree (असहमत)
7	Have to travel a long distance (more than 20 Km) to avail better health care facilities (चांगल्या आरोग्य सुविधा उपलब्ध करण्यासाठी दूर जावे लागते)	Agree (सहमत)	Disagree (असहमत)

1.9.14. Section 14: Awareness about TDF programme

Awareness about TDF programme (आविनिबाबत जागरूकता)

Have you heard about **Tribal Development Fund**? (yes....1/no...0)... , If yes, source

(Code)..... (तुम्ही आदिवासी विकास निधीबद्दल ऐकल आहे का? हो/नाही जर हो तर स्रोत.....)

Code: Friends & neighbors- 1 News Paper-2, Agriculture / Horticulture Department- 3, SAU- 4, KVK-5, Input Suppliers- 6, TV/ Radio- 7, Agri. Exhibitions- 8, ZP/GP- 9, Other sources-10.

Did you receive any benefits from TDF ? Yes....1 No0 (तुम्हाला आविनितून लाभ मिळाला आहे का? हो/नाही)

Did you receive any benefits from TDF in the last five years excluding this year? Yes....1 No....0; If yes for how many years?.....

(गेल्या पाच वर्षात तुम्हाला आविनितून लाभ मिळाला आहे का? हो/नाही, हो तर किती वर्षासाठी?.....)

Did you receive any benefits from any other Government Scheme in the last one year? Yes....1 No... 0 (इतर सरकारी योजनांतून लाभ मिळाला आहे का?)

Did you receive any benefits from any other Government Scheme in the last five years excluding this year? Yes....1 No....0; If yes for how many years?.....

(गेल्या पाच वर्षात इतर सरकारी योजनांतून लाभ मिळाला आहे का? हो तर किती वर्षासाठी?.....)

Did you receive any benefits from Small Farmers' Agri-Business Consortium (SFAC)? Yes....1 No....0; If yes for how many years?.....

(SFAC कडून लाभ मिळाला आहे का?)

1.9.15. Section 15: Interventions regarding horticulture

Section – 15 Interventions regarding horticulture			
Materials			
	Yes_____1 No_____0	If yes then	
		Physical (in acre)	Financial (Value in Rs)
Cashew Grafts			
Mango Grafts			
Hirda Grafts			
Chemical Fertilizer (for given plants)			
Farm Equipment (for given plants)			
Fencing (for given plants)			
Organic Fertilizer (for given plants)			
Forestry Seedling (for given plants)s			

Pesticides/Insecticides (for given plants)			
Pots of Irrigation (for given plants)			
Seeds for fencing (for given plants)			
Spray Pump (for given plants)			

1. How many mango plants survived? _____
 2. How many cashew plants survived? _____
 3. How many hirda plants survived? _____
 4. Do you get labor charges for working for these plants? Yes_____1 No_____0
 5. Do you get assistance for intercropping while maintaining above plants? Yes_____1 No_____0
- Nature: Cash/Kind If Cash _____ If Kind _____
6. Do you get any other assistance regarding horticulture other than above? Yes_____1 No_____0

If yes, then what kind of assistance do you get?

1.9.16. Section 16: Interventions regarding water resource development

(जल संवर्धना आणि विकास या बाबतीत हस्तक्षेप)

		New wells	Repairing of wells	Plastic barrels	Jalkund	Water lifting Device	Other 1. _____	Other 2. _____
1.	Nature of ownership Common _____ 1 Individual _____ 2							
2.	Quantity (नंबर)							
3.	Own Contribution (Rs) (स्वयोगदान)							
4.	Amount financed by loan (Rs.) (कर्जाची रक्कम)							
5.	Source of Credit Bank -1 MFI -2 Money lender -3 4. Friend/Relatives 5. Other – 888 (कर्जाचा स्त्रोत)							
6.	Subsidy amount from TDF (Rs.) (आविनिच्या सबसिडीची रक्कम)							
7.	Mode of Subsidy Transfer: Price Subsidy -1 DBT -2 (सबसिडीचा प्रकार)							
8.	Total Cost (Rs.) (एकूण खर्च)							
9.	If DBT, Number of days taken to receive subsidy? (जर DBT किती दिवसात पैसे मिळतात?)							
10.	Area covered (acres per implement) (व्यापित जमिन)							
11.	Benefits derived from the implement (Codes Below) योजना रबवण्यातून मिळालेला लाभ)							

12.	Did you receive subsidy from any other scheme? (दुसरी कोणती सबसिडी मिळाली आहे का?) Yes---1, No---2. If yes mention name of the scheme (जर हो तर योजना)_____							
13.	If subsidy not received, would you have bought this? (yes---1/no---2) (जर सबसिडी मिळाली नसेल तर तुम्ही खरेदी केले आहे का?)							

1. Do you get any other assistance regarding water resource development other than above? Yes_____1 No_____0

1. If yes, then what kind of assistance do you get?

1.9.17. Section 17: Interventions made for other infrastructure

(हस्तक्षेप)

		Field Nursery	Poly House	Shade Net	Green House	Plastic crates	Processing Equipment	Kitchen Garden	Other_1. _____
1.	Own Contribution (Rs.) (स्वयोगदान)								
2.	Amount financed by loan (Rs.)? (कर्जाची रक्कम)								
3.	Source of Credit Bank -1 MFI -2 Money lender -3 4. Friend/Relatives 5.Other – 888 (कर्जाचा स्त्रोत)								
4.	Subsidy amount (Rs.) (आविनिच्या सबसिडीची रक्कम)								

5.	Total Cost (Rs.) एकूण खर्च								
6.	Nature of Subsidy: Price Subsidy -1, DBT -2, Bank loan at lower rate of interest-3, Bank loan at longer repayment period-4, Simplification of procedures- 5, Any other-6 (सबसिडीचा प्रकार)								
7.	If DBT, Number of days taken to receive subsidy? (सबसिडी मिळण्यासाठी किती दिवस लागतात?)								
8.	Area covered (acres per implement) (व्यापित जमीन)								
9.	Benefits derived (Codes Below) (मिळालेला लाभ)								
10.	If subsidy not received, would you have made this expense? (yes/no) (जर सबसिडी मिळाली नसेल तर हा खर्च तुम्ही स्वता केला आहात का?)								

1.9.18. Section 18: Interventions made under animal husbandry and dairy

(पशुसंवर्धन आणि दूध उत्पादन संबंधीत हस्तक्षेप)

Sl. No.		Cows (गायी)	Buffaloes (म्हैशी)	Sheep / Goat and other animals (शेळी, मेंढी आणि इतर)	Poultry (पोल्ट्री)	Others (इतर)
1	Have you bought this animal? (तुम्ही पशु विकत घेतला आहे का?)					
2	Actual cost (Rs.) (एकूण खर्च)					
3	Own Contribution (स्वताचे योगदान)					
4	Amount financed by loan (Rs.)? (कर्जाची रक्कम)					
5	Source of Credit: Purchased by own source-1, Bank -2 MFI -3 Money lender - 4, Other – 888 (कर्जाचा स्त्रोत)					
6	If subsidy not received, would you have bought this? (yes---1/no---0) (जर सबसिडी मिळाली नसेल तर तुम्ही खरेदी केले आहे का?)					

Sl. No.	Feed Supplements	Frequency and Quantity	Total Cost in Rs (एकूण खर्च)	Subsidy from TDF in Rs. (if any) (अविनितून मिळालेली सबसिडी)
1	Calcium (कॅल्शियम)			
2	Protein (प्रोटीन)			
3	Jaggery (जागरा/गूळ)			
4	Azolla (अझोला)			
5	Fodder seed (चारा बीयाण)			
6	Fodder root cuttings (चारा कंद/मूळ)			
7	Vaccine (वॅसी)			
8	De-worming tablets (अपषध)			
9	Others (इतर)			

1.9.19. Section 19: Direct intervention

(सरळ हस्तक्षेप)

Nature of financial help through TDF _____ (आविनितून मिळालेल्या आर्थिक मदतीचे स्वरूप)

Did you get any assistance in income generation from the animals? 1. Yes; 0. No. (Codes: Milk production—1, meat production---2, any other---3)

(पशूसंवर्धनातून उत्पादनवाढीसाठी तुम्हाला इतर कोणती मदत मिळाली आहे का?)

Did you get any assistance in fodder development? 1. Yes; 0. No. (Codes: for growing fodder crops---1, purchasing green fodder—2, purchasing dry fodder—3, any other supplements---5)..... (चारा उत्पादनासाठी तुम्हाला कोणती मदत मिळाली आहे का?)

Whether received veterinary services for animals under TDF? 1. Yes; 0. No. (आविनितून जनावरांना वैद्यकीय मदत मिळाली आहे का?)

1.9.20. Section 20: Intervention related to the soil conservation

Section – 20 Intervention related to the soil conservation (माती संवर्धन संबंधीत हस्तक्षेप)

Through intervention, farm bunds have been built at my farm

Yes _____1 No _____0

If yes, how much cost do you incur for farm bunds?

Intervention has been made for Continuous Contour Trenches (CCT)	Yes_____1 No_____0
If yes, how much cost do you incur for CCT?	
Through intervention, water shed has been built	Yes_____1 No_____0
If yes, how much cost do you incur for water shed	
Other intervention regarding soil conservation (Please specify)	

1.9.21. Section 21: Other intervention

	Yes_____1 No_____0
Through TDF, awareness activities related to health are conducted	
Through TDF, support for medicines is provided	
Through TDF, the woman from household is getting training related to the progress of the household	

2. Do you get any support other than above? Yes_____1 No_____0
If yes then nature of assistance

-
3. Do woman from the household receive any support in terms of material for development purpose? Yes_____1 No_____0
If yes mention it.

1.9.22. Section 22: Environmental benefits

Section – 22 Environmental benefits					
		Before getting TDF (आविनि च्या अगोदर)		After getting TDF (आविनि च्या नंतर)	
	1 Eco-friendly practices (पर्यावरण अनुकूल/इको फ्रेंडली पद्धती)	Exists – Non existent (होते/नव्हते)		1. Increase (वाढ/घट)	2. Decrease
	a. Availability of irrigation water (सिंचनाच्या पाण्याची उपलब्धता)				
	b. Ground water storage (भूजल पाणी)				
	c. Use of organic manures and bio-pesticides ((संद्रीय खते आणि बायो-पेस्टिसाइड (किडकनाशके) यांचा वापर)				
	d. Adoption of soil conservation practices (माती संवर्धन पद्धतींचा वापर)				
	e. Adoption of water conservation practices (जल संवर्धन पद्धतींचा वापर)				
	f. Dependence on forest for fodder, fuel, etc (इंधन, चारा यांसाठी जंगलावर अवलंबून)				
	g. Green cover in the area and the adjoining areas (परिसरातील हरित कव्हर)				
	h. Propensity of flood (पूराची संभवना)				
	i. Propensity of drought (दुष्काळाची संभवना)				

1.9.23. Section 23: Details of various types of compost applied (in the last year)

कॅपोष्ट बदलची माहिती

Item		Area Covered (Acres)	Qty. Supplied (Kg)	Cost (Rs)	Subsidy provided	Mode of subsidy transfer (Price Subsidy -1, DBT - 2)	Whether consumed by own (yes—1, no—2)	Whether sold in market (yes- --1, no—2)
FYM Compost								

Vermi compost								
Bio-gas waste								
Green manures								
Others								
Total								

1.9.24. Section24: Community Institutions

Section – 24Community Institutions (संस्था)			
1.	Do the village planning committee/Panchayat get actively monitor the execution of the works undertaken through the TDF? (गाव नियोजन समिती आविनितून केलेल्या कामाची देखरेख करते का?)	Yes हो	No नाही
2.	Does the village planning committee/ Panchayat get actively involved in planning for improving the outcome of the works undertaken through the TDF? (गाव नियोजन समिती आविनितून केलेल्या कामाच्या परिणाम्या गुणवत्ता वाढी साठी प्रयत्न करते का?)	Yes हो	No नाही
3.	Does the village planning committee/Panchayat get actively involved in disseminating technical knowhow of the works undertaken through the TDF? (गाव नियोजन समिती आविनितून केलेल्या तांत्रिक कामाचा प्रसार करते का?)	Yes हो	No नाही
4.	Does the village planning committee/Panchayat get actively involved in book keeping the works undertaken through the TDF? (गाव नियोजन समिती आविनितून केलेल्या कामाची नोंद ठेवते का?)	Yes हो	No नाही
5.	Does the village planning committee/Panchayat get actively involved in planning and training for better fund management activities for the works undertaken through the TDF? (गाव नियोजन समिती चांगल्या निधी नियोजनासाठी प्रशिक्षण आणि नियोजनाच्या प्रक्रीयेत सहभागी होते का?)	Yes हो	No नाही

6.	Apart from the village planning committee/Pnachayat, any other institution involved in the works Undertaken through the TDF? (गाव नियोजन समिती शिवाय अजून कोणत्या संस्था आविनितून केलेल्या कामात सहभागी झालेल्या आहेत?)	Yes हो	No नाही
	Self Help Groups (SHGs)	Name:	
	Joint Liability Groups (JLG)	Name:	
	Farmer Producers' Organizations (FPO)	Name:	
7.	What was the role of the organizations mentioned in 13, if any? (वरील संस्था कश्याप्रकारे सहभागी होतात? (जर असतील तर)		
8.	How many people are involved in the said organization? (किती लोक वरील संस्थेत सहभागी झालेले आहेत?)		
9.	What do this organization do? (वरील संस्था काय काम करते?)		
10.	What is the yearly income (in Rs, if any) do this organization generate? (वरील संस्थेचे एकूण वार्षिक उत्पन्न किती आहे?)		
11.	How many employees are working with this organization? (वरील संस्थे किती कर्मचारी काम करत आहेत?)		
12.	What kind of benefits do you receive from the said organization? (वरील संस्था भत्ता कशी देते?)		
13.	Do the village planning committee/Panchayat get actively monitor the execution of the works undertaken through the TDF?	Yes हो	No नाही
14.	Does the village planning committee/Panchayat get actively involved in planning for improving the outcome of the works undertaken through the TDF?	Yes हो	No नाही
15.	Does the village planning committee/Panchayat get actively involved in disseminating technical knowhow of the works undertaken through the TDF?	Yes हो	No नाही
16.	Does the village planning committee/Panchayat get actively involved in book keeping the works undertaken through the TDF?	Yes हो	No नाही

17	Does the village planning committee/Panchayat get actively involved in planning and training for better fund management activities for the works undertaken through the TDF?	Yes हो	No नाही

1.9.25. Section 25: Credit Penetration and its Impact

Section – 25 Credit Penetration and its Impact (कर्ज)

	Before getting TDF (आविनि च्या अगोदर)				After getting TDF (आविनि च्या नंतर)			
	Are you aware of this product? (Yes1; No-2) हाबद्दल माहिती आहे का? (हो/नाही)	If 'Yes' for the previous, does any member of your household currently hold this product (personally or jointly)? (Yes1; No-2; Don't know/ Can't say-98) जर हो तर घरातील	If 'no' or 'don't know' for the previous, then tell us that in the last 3 years, has any member of your household chosen any of the following products. (Yes-1; No-2; (Yes-1; No-2;	Interest Rate (If applicable) व्याजदर	Are you aware of this product? (Yes1; No-2) हाबद्दल माहिती आहे का? (हो/नाही)	If 'Yes' for the previous, does any member of your household currently hold this product (personally or jointly)? (Yes1; No-2; Don't know/ Can't say-98) जर हो तर घरातील	If 'no' or 'don't know' for the previous, then tell us that in the last 3 years, has any member of your household chosen any of the following products. (Yes-1; No-2; Don't know/ Can't say - 98) जर नाही तर गेल्या तीन वर्षात कोणी वापरत होते का?)	Interest Rate (If applicable) व्याजदर

Remarks

1.9.26. Section 15: Role of Programme Implementing Agency (PIA)

Role of Programme Implementing Agency(PIA) कार्यक्रम राबवणाऱ्या संस्थेचा सहभाग						
	1	Name of the PIA (नाव)				
	2	Do they have an office in your area? (तुमच्या भागात ह्या संस्थेचे कार्यालय आहे का?)	Yes हो	No नाही		
	3	Activities taken up by the PIA for implementing the programs under TDF (आविनिर्तून संस्थेने हाती घेतलेले कार्यक्रम)				
	4	How often the PIA personnel did meet the beneficiaries? (संस्थेचा कर्मचारी लाभार्थीला कधी भेटतो?)	Weekly (आठवड्यात)	In 15 days (पंधरा दिवसात)	Monthly (महिन्यातून एकदा)	Other (इतर)
	5	I feel welcome at PIA local office (मला संस्थेच्या कार्यालयात जायला चांगल वाटत)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	6	I feel comfortable asking questions about PIA services (मला संस्थेच्या कार्यक्रमाविषयी प्रश्न विचारताना संकोच वाटत नाही)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	7	I feel included at PIA events (मला ह्या कार्यक्रमात आपल वाटत)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	8	I feel my feedback about services is valued by the PIA (माझ्या मतांना विचारात घेतले जाते अस मला वाटत)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	9	I feel the required capacity building is done by PIA (मला माझ्या कौशल्याचा विकास झाला आहे अस वाटते)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत

	10	The hours that PIA offers services (when the office is open) work for me (मला दिलेला वेळ हा माझ्यासाठी उपयोगाचा आहे)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	11	The mix of services that PIA offers meet my needs (मला दिल्या गेलेल्या सोयी माझ्या गरजा पूर्ण करतात)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
		a. Wadi interventions (वाडी निर्मिती)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
		b. WRD activities (WRD कार्यक्रम)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
		c. Livelihood activities (पशूधन कार्यक्रम)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	12	Scheduling of works by PIA was satisfactory (कामाचे वेळापत्रक समाधानकारक आहे)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	13	Adequate staffs were provided by the PIA (पुरेशे मनुष्यबळ आहे)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	14	The staffs of the PIA was well trained and knowledgeable (मनुष्यबळ हे कुशल आहे आणि त्यांना कामाची माहिती आहे)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
	15	The staffs of the PIA provided technical inputs (कर्मचारी हे तांत्रिक मदत पुरवतात)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत

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16	Adequate handholding to execute the technical inputs was provided by the PIA (तांत्रिक माहितीसाठी पुरेशे सहकार्य देले जाते)	Strongly agree पूर्ण सहमत	Agree सहमत	Disagree असहमत	Strongly disagreed पूर्ण असहमत
17	Records of the TDF project are taken (आविनि च्या कामकाजाची नोंद ठेवली जाते)	Weekly (आठवड्यात)	In 15 days (पंधरा दिवसात)	Monthly (महिन्यातून एकदा)	Other (इतर)
18	What other programs of the Government are you aware of? (सरकारच्या इतर कोणत्या कार्यक्रमाची माहिती तुम्हाला आहे?)				
19	Did the PIA facilitated with some of them? (संस्था त्या कार्यक्रमात सहभागी होते का?)	Yes हो		No नाही	
20	Apart from the TDF project what other developmental activities are taken up by the PIA in this area? (आविनि सोडून इतर कोणते विकास काम ह्या संस्थेने तुमच्या भागात केली आहेत का?)				
21	Do you participate in some of them? (आपण त्या कामात सहभागी झाला आहोत का?)	Yes हो		No नाही	
	a. If yes, what are they? (जर हो तर कोणत्या?)				
Additional Remarks of the investigator, if any.					

1.9.27. Section 16: Other information regarding TDF

Agricultural Marketing details of TDF beneficiaries (आविनिच्या लाभार्थीच्या कृषी मार्केटींग संबंधीत माहिती)			
Amount of sale (Rs per hh) (एकूण विक्री)	Marketing Channels (Code) (मार्केटींग चॅनेल)	selling through different agents (Code) (इतर अजंठमार्फत विक्री)	Average distance covered for the sale (Km) (सरासरी अंतर)

Marketing Channels Code: Village market-1, APMC Mandi-2, Private and others- 3

Selling through different agents Code: Commission agent-1, Govt. Agency-2, Private traders and other-3, if more than one-4, others--5

1.9.28. Section 28: Constraints faced in availing TDF benefit

Sl. No.	Constraints	Tick in the box
1	Information about RKVY programme details not easily available (साकृवियो बदल माहिती सहज उपलब्ध होत नाही/मिळत नाही.)	
2	Contact details of the department which pay subsidy not available (सबसिडी देणाऱ्या विभागाचे संपर्क क्रमांक उपलब्ध नाहीत)	
3	Eligibility or criteria for availing the subsidy not known सबसिडीचा लाभ घेण्यास पात्र होण्यास लगेच्या अटीची माहिती माहित नाही	
4	Procedure for the subsidy very tedious सबसिडी ची प्रक्रीया खुपच रटाळ आहे	
5	No of documents required for availing subsidy are too many	
6	Subsidy paid after purchase while initial payment remains the highest problem	

7	Delay in transfer	
8	Prescribed machinery/asset not easily available in the market	
9	Institutional financing facility not available	
10	Capacity building/technical advice not provided	
11	Long time gap between the purchase and receiving the subsidy amount	
12	Biased towards large land owners	
13	Poor quality of materials/machinery are supplied	
14	Implementing agencies are located far away	
15	Incidence of bribery	
16	Lack of monitoring	
17	Complementary inputs not available	
18	Restricted Choice	
19	Lack of marketing support	
20	Any other (specify)	

1.9.29. Section 29: Opinion of beneficiary households about TDF programme

Opinion of beneficiary households about TDF programme (tick the number in the scale which you think for scale 1 to 5, with 1 is best and 5 is worst)					
	1	2	3	4	5
Financial Assistance					
Building Infrastructure					
Capacity Building					
Post-harvesting storage					
procurement					
Others					



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