

Impact Assessment Study Of Holistic Rural Development Programme (HRDP)

Maharashtra



Prepared For:



HDFC Bank CSR

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Abbreviations

ASER	Annual Status of Education Report
CSR	Corporate Social Responsibility
FFS	Farmer Field School
FGD	Focus Group Discussion
FPO	Farmer Producer Organization
GoM	Government of Maharashtra
HDFC	Housing Development Finance Corporation Limited
HDI	Human Development Index
HRDP	Holistic Rural Development Programme
IDI	In-depth Interview
LSD	Lumpy Skin Disease
NCD	Non-Communicable Disease
NGO	Non-Governmental Organization
NRM	Natural Resource Management
NRLM	National Rural Livelihood Mission
NSSO	National Sample Survey Office
RO	Reverse Osmosis
SDG	Sustainable Development Goal
SHG	Self Help Group
SEQI	School Education and Quality Index
AFARM	Action for Agricultural renewal in Maharashtra
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Executive Summary

The impact assessment study focuses on measuring the impact of the Holistic Rural Development Programme (HRDP) of HDFC Bank that was implemented by Vikas Sahyog Pratishthan (VSP) in project clusters of the Shindkheda block of Dhule district in Maharashtra. The study focused on understanding the overall process undertaken by HDFC Bank and the partner organisation in implementing the project activities, key milestones achieved, impact created by these activities, challenges faced, and the manner in which such challenges were handled.

For impact assessment, both quantitative and qualitative methodologies were used. In this project cluster, all eight intervention villages were selected for the study. Sample from each village was selected by using Probability Proportionate to Size (PPS) sampling method. The list of beneficiaries was obtained from the implementing partner - Vikas Sahyog Pratishthan (VSP). Since beneficiary selection was undertaken independently for each programme, the selection of more than one beneficiary from a single household was probable. The total sample size covered for the quantitative study was 410 households and for the qualitative study, 9 focus group discussions and 9 in-depth interviews were conducted. The impact assessment aims to critically and objectively evaluate the implementation and performance to recommend possible ways to add value by showcasing successful initiatives, to determine the reasons why certain results were achieved or not, to draw lessons, and to derive good practices and lessons learnt.

Figure 1: Overview of project impact

	Health and Sanitation	Skill Training and Livelihood Enhancement	Natural Resource Management	Promotion of Education
Overview of Activities	Health related input awareness session for the community Installation of RO filter	SHG strengthening training on agricultural practices, support for enterprise development	Desiltation of existing water harvesting structures, water budgeting exercise, horticultural crops and fodder demonstration	Educational paintings, school repair work, installation of school library, smart class, RO filters
Areas of Improvement	46% reported improved health status 73% reported less spreading of disease	350% increase in average income from SHGs 125% increase in income from skill enterprises established/expanded	48% change in income due to agricultural interventions	Promoting quality education through infrastructure development
Challenges	No timely available of filtered water from the RO units established.	Participation from the farmers and community for agriculture-based trainings has been challenging	No grievance redressal mechanism Unavailability of post harvest techniques	Toilets need upgradation and maintenance RO units not operated to maximum capacity
Recommendations	Options for convergence with the government scheme should be looked at in close consultation with the community	The institutional structure created under the program can be made more robust	A system may be put in place to ensure that the beneficiaries do not face any difficulties post-intervention	An asset management fund/committee needs to be established

Natural Resource Management

Interventions under HRDP included the construction of water management structures (construction of existing check dams, nala deepening), activities to enhance agriculture production and productivity such as crop diversification, farm plot demonstration, seed distribution and crop protection, water management in agriculture (irrigation), and interventions to promote organic farming. These interventions have led to an increase in irrigated land from 2 acres to 2.5 acres in the project area, as per the quantitative survey. **Coupled with improved irrigation, agriculture interventions have been pivotal in enhancing production and decreasing the cost of cultivation and agricultural income from agriculture. The overall net income change has been to the tune of 48% (median).**

Skill Training and Livelihood Enhancement

The project focused on skill development and livelihoods in the eight villages of the Shindkheda block, especially for the traditionally marginalised social and occupational groups. The activities include SHG-based women empowerment; agriculture training and support; livestock management; and entrepreneurship development. A central thrust of the HDFC Bank's project at Dhule was to strengthen and enable women's group-based institutions such as self-help groups to promote savings and build productive assets of their own and particularly to work on seed banks. The HRDP interventions for skill training and livelihood enhancement have also incorporated activities like livestock rearing.

The HDFC Bank project emphasized the skill development of the farmers mainly through agriculture training. The idea was to impart skills that enable farmers to enhance their crop productivity, improve the health of the soil by means of mixed farming and crop diversification and dissemination information on how farmers can protect their crops from weather-related shocks. Since the quality of material and support provided was satisfactory, the micro-enterprises established would ensure the sustainability of the intervention.

Promotion of Education

Activities under education in Dhule, Maharashtra included (a) Educational Institutions Development: Educational paintings, school repair work, installation of school library - providing cupboards and books, smart class (digital screen and projector), installation of RO filter; separate washrooms for girls and boys, water storage tank and (b) Awareness generation session, SMC training. The intervention under HRDP in promoting education aligns with the central and state government objective of providing quality education to the marginalised section of society. The awareness session on health and hygiene has resulted in a decrease in the rate of absenteeism owing to children falling ill before the intervention. **The program supported the government's vision of providing quality education in terms of infrastructure and services which can empower the vulnerable sections.**

Health and Sanitation

Health and sanitation are essential components contributing to rural development. In the programme villages, diverse interventions for improving health and sanitation were carried out. Activities under the theme include (a) Health-related awareness input sessions for women and (b) Installation of RO filters in villages. Health awareness input sessions were organised where villagers were made aware of the importance of frequent health checkups, a balanced and nutritious diet, and the importance of menstrual hygiene for women. **Through the project interventions, there is a considerable improvement with regard to a better understanding of the health issues in the villages.**

Table 1: Summary of key income indicators

Income Indicators (based on median)	Before	After	% Change
Average Net Income from Agriculture (INR)	33750	50000	48%
Average Income from Skill (income from enterprises) (INR)	2000	4500	125%
Average Income from SHG (INR)	1000	4500	350%
Average Income from livestock (INR)	2096	3415	63%
Average Productivity of 3 major crops (kg/acre)	565	823	46%

For natural resource management, three indicators have been used for the calculation of HRDI- the average productivity of crops (3 major crops) grown (quintal per acre), the proportion of farmers reporting access to irrigation, and the area under irrigation (ha). For the thematic area of skill training and livelihood enhancement, three indicators have been used for HRDI calculation- the proportion of beneficiaries reporting monthly income from enterprises above the baseline median, the percentage of respondents following agricultural practices (application of organic manure, construction of vermicompost pits, timely application of fertilizers and pesticides, conservation agriculture) and the proportion of beneficiaries reporting a monthly income of SHG from enterprise above the baseline median. For education, two indicators were used for HRDI calculation –(a) percentage of teachers reporting increased access to learning material support (books, learning material), and (b) the percentage of students reporting conducting sanitation, hygiene, and cleanliness awareness generation session. For the thematic area, health and sanitation, HRDI was calculated based on two indicators which are an increase in the percentage of people using individual toilets, and the percentage of people disposing of liquid waste in closed pits.

Table 2: HRDI overview

Overall HRDI		
Baseline	Endline	% change
0.46	0.66	43%

1. Introduction

1.1 Background of the Study

As part of HDFC Bank's CSR initiative, programs are supported to deliver holistic rural development. Within Parivartan, the "Holistic Rural Development Programme" (HRDP) is the flagship CSR program, under which non-governmental organizations across the country are supported to deliver development interventions. The vision of the program was to create happy and prosperous communities in terms of socio-economic and ecological development which is sustainable. The holistic approach supports the lives of communities by providing necessary inputs on issues like shaping economic independence through skilling, providing basic infrastructural development, and establishing a better ecosystem thereby promoting better living conditions. Developing human capital, natural resources, and infrastructure in poor and backward villages would bring about their socioeconomic transformation.

The program was implemented by an NGO partner Vikas Sahyog Pratishthan in Dhule, Maharashtra with the support of HDFC Bank. The major focus areas for intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement, Promotion of Education, Healthcare & Hygiene. However, the extent of the work in each village was undertaken based on the need and varied from place to place.

1.2 Partner Organization - VSP

Vikas Sahyog Pratishthan (VSP) was established in 1990 and has been working to promote the livelihoods and dignity of poor communities in rural Maharashtra. The intervention includes sustainable livelihood, soil and water conservation, quality education and capacity building of local institutions.

The vision and mission of VSP are as follows:

Vision: A society based on equality, social justice and harmony with nature.

Mission: To facilitate a process of social change with associated voluntary development organizations to create just and human societies that are sensitive to nature and gender.

Goals:

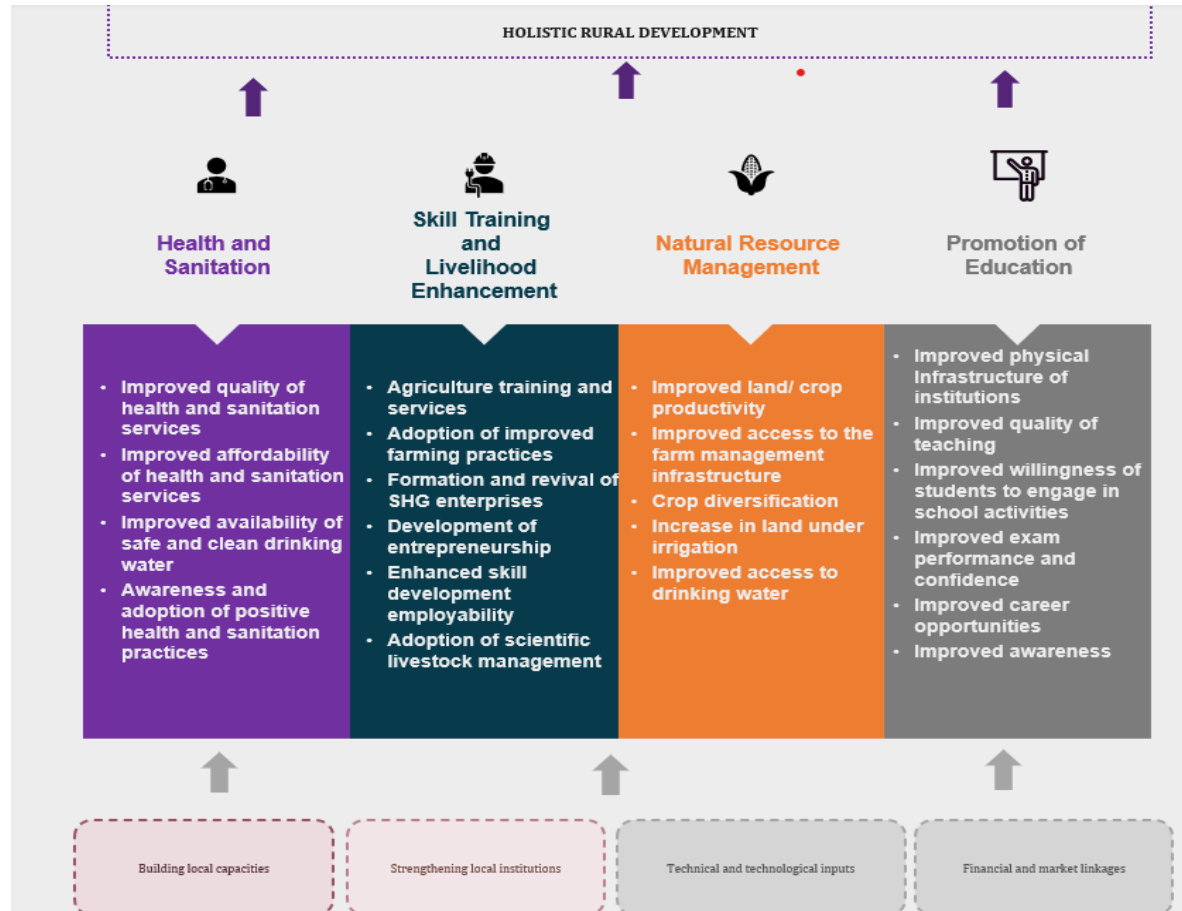
- To support and facilitate the issue-based process (identification of local & grassroots issue-based process) initiated by civil society organizations and support them as per necessity (advocacy, research, documentation, finance etc.)
- To strengthen civil society organizations, to strengthen their capacities and systems (financial and non-financial support, legal compliances/framework, organizational and institutional development and human resource development etc.)
- To evolve and facilitate the collective strength of civil society for wider impact (issue-based network, needs-based network and capacity development program).

1.3 Purpose and objectives of the study

The impact assessment aims at understanding the overall process undertaken by HDFC Bank and the partner organization in implementing the programme activities, key milestones achieved, the impact created by these activities, challenges faced, and how such challenges were handled. The guiding philosophy behind this study is to add value by showcasing successful initiatives and recommending possible ways to address challenges that exist. The impact assessment aims to critically and objectively evaluate the implementation and performance, to determine the reasons why certain results were achieved or not, draw lessons, and derive good practices and lessons learnt. The study

is expected to provide evidence-based findings which would inform HDFC Bank in taking operational and strategic decisions while planning and funding its partner organizations for such programmes. The evaluation was also an opportunity to learn about the relevance of the programmes implemented and their effectiveness.

Figure 2: Conceptual framework of the implementation



Agriculture is one of the main occupations in Dhule. The district receives 728.5 mm of annual average rainfall. Of its total geographical area (824.6 thousand ha), over 56.4% (464.8 thousand ha) is under cultivable land. The net irrigated area in Dhule is 87.1 thousand ha while the gross irrigated area is 117.1 thousand ha. The major crops in the area are cotton, pearl millet and groundnut. A very high proportion of the district's rural population depends on agriculture for livelihood. Issues such as delays in rainfall and depleting groundwater levels have led HDFC Bank's HRDP to focus on the desiltation of existing water harvesting structures which can ensure an adequate supply of water for agriculture. Apart from agriculture, the programme also focused on providing other livelihood opportunities through goat-rearing units, providing entrepreneurial support in setting up welding shops, tailoring/boutiques and strengthening SHGs. Through these interventions, the program was implemented to create sustainable communities in 8 villages (Ambode, Vani, Ajang, Velhane, Tikhi, Navare, Hadsuni and Hendrun) in the Shindkheda block of Dhule district. With the objective to achieve holistic rural development in these areas, the programme has focused broadly on four thematic areas of intervention – promoting education, health and sanitation, natural resource management, skill building and livelihood enhancement.

2. Research Methodology

The assessment used both qualitative and quantitative methods. For each cluster and thematic area, activities completed were identified. The impact generated by these activities was assessed using the criterion of Relevance and Convergence, Effectiveness and Impact, and Sustainability and Replicability. The evaluation process was carried out in a consultative manner involving interactions with both HDFC Bank and VSP teams at key junctures.

Under the criteria of relevance and convergence, the evaluation sought to answer whether the design of the program interventions is aligned with the state's plans and priorities for rural development. In addition, the evaluation examined whether the design and implementation of the program were relevant to the local needs of the most vulnerable groups. The evaluation tried to understand contextual factors that influence the program design and its implementation and the extent to which such factors have been considered to tailor the program design to suit the local needs. The study has observed if there has been a convergence/ made use of the existing resources of the government and whether different stakeholders involved have worked together to achieve the outcome of the program.

To assess the impact and effectiveness of the program, the findings seek to establish the values of outcome indicators of all the thematic interventions. These findings are assessed against the outcome indicators finalized during the outcome harvesting stage. Further, through qualitative evidence, the evaluation tries to understand whether and how the program impacted the lives of the community members in the program areas. This was done through an analysis of program outcomes in light of certain variables identified in consultation with HDFC Bank. The findings from primary quantitative data have been substantiated by the information gathered from discussing with the communities/beneficiaries, teachers, students, entrepreneurs, and local institutions at the village level. Through primary data, the study has tried to understand if the program has worked on strengthening the community's capacity to ensure sustainability, and whether any of the activities or strategies adopted have been/could be replicated.

2.1 Design and Methodology

A review of various program documents including HDFC Bank's CSR Policy, Rapid Rural Appraisal Reports, Program implementation timelines, Communication, and Documentation Products, and other relevant reports/literature related to the program was utilized for a secondary review.

The primary research included a quantitative household survey as well as in-depth interviews and focused group discussions with program beneficiaries and the partner NGO. The outcome mapping and result chain development were undertaken in consultation with the HDFC Bank team. The exercise resulted in the identification of standardized key outcomes and indicators related to each of the program's thematic areas. Based on the standardized list of outcomes and outputs, the questionnaire for the state was developed.

2.2 Sample size and distribution

Quantitative sampling methodology: In this cluster, eight intervention villages were selected for the study.

Stage 1 – Selection of villages: All the intervention villages were selected as sample villages. Sample from each village was selected by using Probability Proportionate to Size (PPS) sampling method. Care was taken to cover the maximum sample from the villages that have received a maximum number of interventions in order to get appropriate coverage of all components of the program.

Stage 2 – Selection of beneficiaries: The list of beneficiaries was obtained from the implementing partner – VSP (Vikas sahiyog pratishthan) Since beneficiary selection was undertaken independently for each programme, the selection of more than one beneficiary from a single household was probable. Also, there have been instances where a single beneficiary received multiple support for the intervention.

Qualitative sampling methodology: Qualitative tools of In-depth Interviews (IDI) and Focus group discussions (FGD) were administered for obtaining information about the remaining themes as well as to enrich the household survey information with a deeper understanding.

Since there was no baseline available for this evaluation, the recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program.

The sample size covered during the field is as follows:

Table 3: Quantitative sample covered

District	Health and Sanitation	Skill Training and Livelihood Enhancement	NRM	Promotion of Education (Students and teachers) *	Total
Dhule	80	271	224	53	410

* The sample size covered in the thematic area - promotion of education amongst students and teachers was 53 across all the eight villages

Table 4: Qualitative sample covered

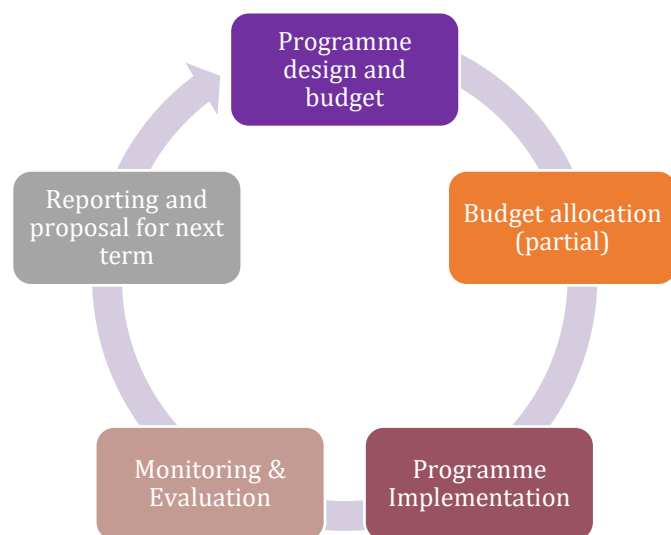
District	FGDs					IDIs			
	Organic farming/ Mixed farming	SHG	VDC	Check dam/ Hand pump repair	Health camp/ RO unit	School teacher	Sarpanch	Kitchen garden	Microenterprise
Dhule	2	2	1	2	2	2	1	2	4
Total	9					9			

A team of local enumerators, with requisite education and experience, was hired for data collection. One day of training at Dhule, Maharashtra was provided to the enumerators and supervisors by the NRMC team.

3. Program review

3.1 Program design and implementation

Figure 3: Project Planning and implementation process



The programme interventions are decided on an annual basis, with an annual budget allocation based on a proposal by VSP to HDFC Bank.

Based on preliminary assessments, the partner organization prepared an annual work plan wherein activities were proposed on a need basis. While this approach has helped in providing support to the immediate need of the communities, a systematic approach to resolving issues around such needs and a long-term vision and outcomes towards the thematic areas for HRDP remain desirable.

Based on the observation in the field, budget allocation was largely provided for infrastructure and material support along with skill training and livelihood, whereas

behavioural interventions were very limited in the Dhule HRDP project.

3.2 Program relevance

The rural population in Maharashtra is predominantly dependent on agriculture and allied activities for their livelihoods and a significant proportion of them are at a subsistence level of income and livelihood. Intervention villages have been facing the issues of water scarcity since 2015. The state government has made substantial efforts toward water management for agriculture through the construction of the canal.

Even though most rainfall occurs in the months from June to September, the region faces an acute shortage of water owing to a lack of infrastructure to support water storage and management. This often leads to low cultivation and crops and decreased productivity. It was difficult for the farmers to cultivate the rabi crops due to water scarcity in the region. In this background, the interventions were designed around creating infrastructure to support water management and storage for agricultural purposes.

There are eight intervention villages - Ambode, Vani, Ajang, Velhane, Tikhi, Navare, Hadsuni and Hendrun. The project area is prone to recurrent droughts and the eight selected villages are the poorest of the category with an average annual income per household of Rs. 21845 as per a baseline by VSP. The households here mostly belong to the SC and ST communities and most of the farmer households belong to the small and marginal farming categories.

Under HRDP intervention for NRM, activities such as crop diversification, exposure visits, on-field demonstration of fodder cultivation, and organizing farmers' resilience camp were promoted. The promotion of crop diversification and cultivation of horticultural crops has had an impact on income,

especially for smallholder farmers who possess smaller parcels of land. The programme has focused on the creation of livelihood opportunities for the economically backward sections of society. Under the intervention, microenterprises such as welding shops, boutique/tailoring shops, and livestock rearing were introduced to create an additional source of income. SHGs were supported in the development of microenterprises such as the establishment of oil mills, masala-making machines, manufacturing of droan/patravali which are disposable items etc. This was done with the intention of improving the financial situation of women and improving their confidence. For the smooth functioning of enterprises, training was done for the members and they were encouraged to promote savings, internal lending and loan repayment.

Although Maharashtra is the largest state economy, and the second most populous, the performance of the health sector is average. The public health system is deficient in terms of spread and the number of hospitals close to the community. The systemic vulnerability due to a massive shortfall in specialists has become evident with the spread of coronavirus disease.¹ In rural areas in Maharashtra, there is still a lack of awareness of the importance of health and many myths related to menstruation and menstrual hygiene practices. It is the need of the hour to dispel them and help rural communities in understanding the importance of timely diagnosis and treatment of diseases which can be ensured by frequent health checkups. Under the intervention, a health camp, and community awareness drive were organized and Reverse Osmosis (RO) units were set up for the rural community to access safe and clean drinking water, thus avoiding water-related diseases.

The project has made efforts to improve the livelihoods of the rural poor in the Shindkheda block under skill-building and livelihood enhancement components. The need for this support in these areas is discussed below.

The rural population in Maharashtra is predominantly dependent on agriculture and allied activities for their livelihoods and a significant proportion of them are at a subsistence level of income and livelihood. The state government has made substantial efforts toward the promotion of microenterprises for sustainable development. Despite the effort, the state faces impediments like inadequate infrastructure, lack of access to markets, etc.

In the project area in Maharashtra, people are struggling in situations of unemployment and disguised underemployment. Microenterprises could play an instrumental role in addressing this challenge as they create local jobs in large numbers and have a significant consequential effect on economic resilience and social well-being. A large section of the people is engaged in the unorganised sector for their livelihood. It has been observed that poor families need diverse income sources to broad base their livelihoods to sustain themselves. Livelihood diversification in rural areas here could lead to an overall economy-wide increase in productivity, and facilitate swifter structural transformation and poverty reduction. The role of the non-farm sector is crucial for job creation. There is an opportunity to diversify the portfolio of economic opportunities available to rural households, thereby enabling greater rural income.

Of the non-farm livelihoods, skill-based work and small enterprises are important sources of income, and HDFC has stepped up its efforts to develop a convergence with the NRLM SHGs and support them in reducing the gaps as regards inadequate business skills and lack of financial support. Some of the microenterprises engaged in non-farm livelihoods struggle to survive and often either fail or become stagnant. While the government envisages the expansion of small and micro-enterprises as one of the development priorities for job creation and economic development, their growth has been subpar. It is against this backdrop that the HRDP project at Dhule focussed on

¹ <https://www.adb.org/sites/default/files/publication/783876/sawp-091-assessment-maharashtra-state-health-system.pdf>

improving/strengthening the credit and financial services provided by SHGs, while at the same time providing them with a range of critical services, such as business development support, mentoring, finance, as well as access to the banking system along with guidance for convergence and integration with other government schemes.

SHG members were encouraged to start their micro-enterprises which could generate additional sources of income for livelihood. For the smooth functioning of the group, training sessions were organized. These training sessions focused on encouraging members to conduct and attend regular meetings and promote internal lending, regular savings and repayment of loans. Exposure visits were planned as an essential component of strengthening the skills of the SHG members to take up microenterprise development. During the intervention period, exposure visits to nearby areas were conducted for the SHG groups with the help of the implementing partner VSP. Moreover, training sessions and activities such as exposure visits were disrupted in 2020 due to the pandemic and the lockdowns as no gatherings were allowed.

As per the ASER report 2018, although learning outcomes in Maharashtra have seen substantial improvement in the last few years, the state has not been able to match its performance from a decade ago. In Maharashtra, drop-out rates show a slightly decreasing trend at upper primary and secondary levels but vary at the primary level. Compared to primary and upper primary, drop-out rates are high at the secondary level. If we look at the gender-wise distribution, drop-out rates are higher among girls as compared to boys. For Dhule district, as per ASER 2018, the proportion of children in the age group 6-14 who are in private schools is 48.3%; the proportion of children in the age group 6-14 who are not enrolled in schools is 2.6%. As regards the learning levels of students in Std III to V, the proportion of children who cannot read Std II text is 49.7%, children who cannot do subtraction constitute 27.1%, and children who cannot read Std II level text are 61.2% and children who cannot divide are 10.2%.

The intervention under HRDP in promoting education aligns with the central and state government's objective to provide quality education to marginalized sections of society. HRDP is working on promoting quality education through infrastructure development such as the construction of separate toilets for girls and boys, the installation of digital screens and projectors, school repair work, and educational paintings. The program also focused on improving learning outcomes by adopting innovative learning techniques that can improve the grasping power of students and creation of a more joyful environment for learning. The program supported the government's vision of providing quality education in terms of infrastructure and services which can empower the vulnerable sections.

4. Study findings

4.1 Demographic profile

This section provides the demographic profile of the respondents covered in the sampled program villages under the assessment. In the sample villages, 60% are female, whereas 40% are male. In terms of the education status of the respondents, about 23% are illiterate and 0.5% have completed their post-graduation. The majority of the sample respondents belong to the other backward class (OBC) in the intervention villages. About 59% of the sample population reported livestock as their major source of income.

Figure 4: Education level of the respondent (n=410)

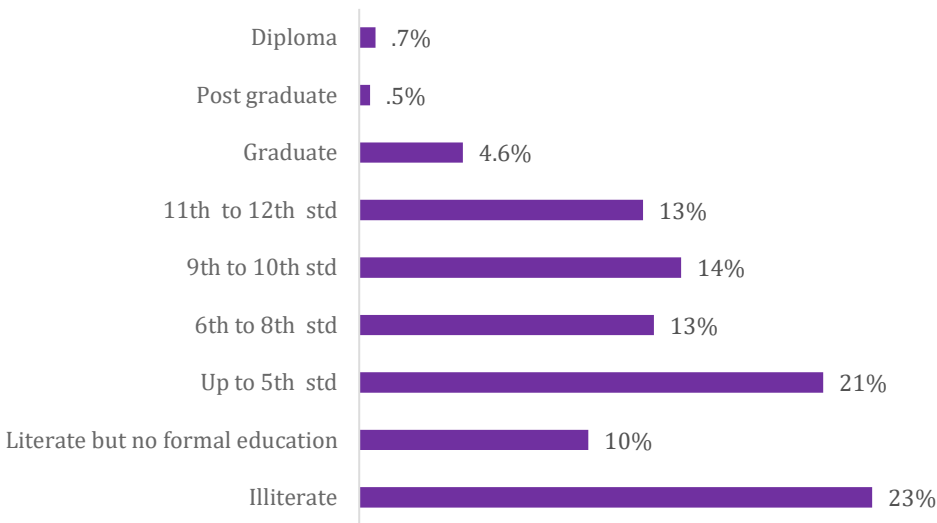
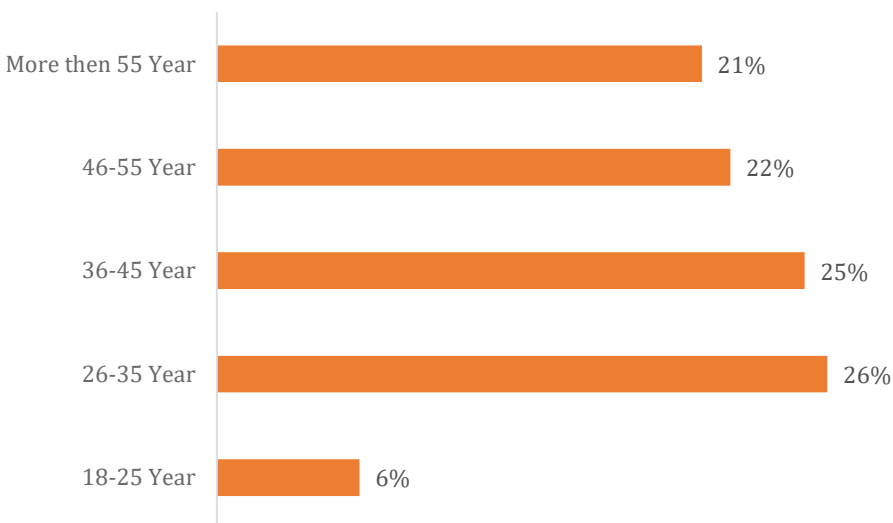


Figure 5: Age of the respondent (n=410)



4.2 Natural resource management

Dhule is situated on the northern side of Maharashtra and comprises blocks viz. Dhule, Sakri, Shirpur and Shindkheda. With 56.4% of the total geographical area of 824.6 thousand hectares, agriculture is the mainstay of the majority of the population in the district. The average rainfall of the district is 566 mm per annum.² Since the district falls under a drought-prone area, agriculture is recurrently affected by drought conditions. This has resulted in low agricultural productivity and further led to a low level of farm income. Further, the majority of the farmers are small and marginal and lack the capacity to deal with the current situation. Around 70% of the farmers in Dhule are smallholders with landholding less than 2 ha. Against this backdrop, the Shindkheda block was selected as the project area with a focus on Natural Resource Management (NRM). All the eight villages selected for the project face drought-like situations and the challenges faced are similar in nature.

Natural Resource Management is one of the most important pillars of HRDP. The interventions in this pillar were designed and implemented keeping in view the needs of the community as well as its suitability to the geography. The programme continued for three years from 2018-2021 resulting in interventions under various activities such as construction and repair of existing check dams, Nala deepening, farm management (crop diversification, farm plot demonstration, seed distribution and crop protection), water management in agriculture (irrigation), and interventions to promote organic farming. Since the focused region is drought-prone, intervention in NRM is expected to ease the water-related issues for both household and agricultural purposes. Further, multiple supports provided under the interventions such as the promotion of crop diversification, mixed and multi-layered cropping and crop protection were aimed at improving productivity and thereby increasing the income for the farmers.

Table 5: Activities covered under NRM

Activity Category	Activities
Farm Management	Crop diversification, mixed cropping pulses plot, multi-layered cropping, organic pulses plot, crop protection, certification of farmers, seed distribution
Water Management	Check-dam construction, water budgeting, drip irrigation and sprinkler irrigation, water harvesting
Drinking Water Management	Hand pump repair, well recharge pit, bore-well repairing, the convergence of well deepening
Clean Energy	Household biogas unit
Awareness Generation	Community awareness drives

Thematic area-wise number of beneficiaries covered during the study is given in the methodology and sampling section. Further, the relevance, effectiveness, and sustainability of activities under Natural Resource Management will be discussed in detail.

² <https://www.nabard.org/auth/writereaddata/tender/1012211816Dhule.pdf>

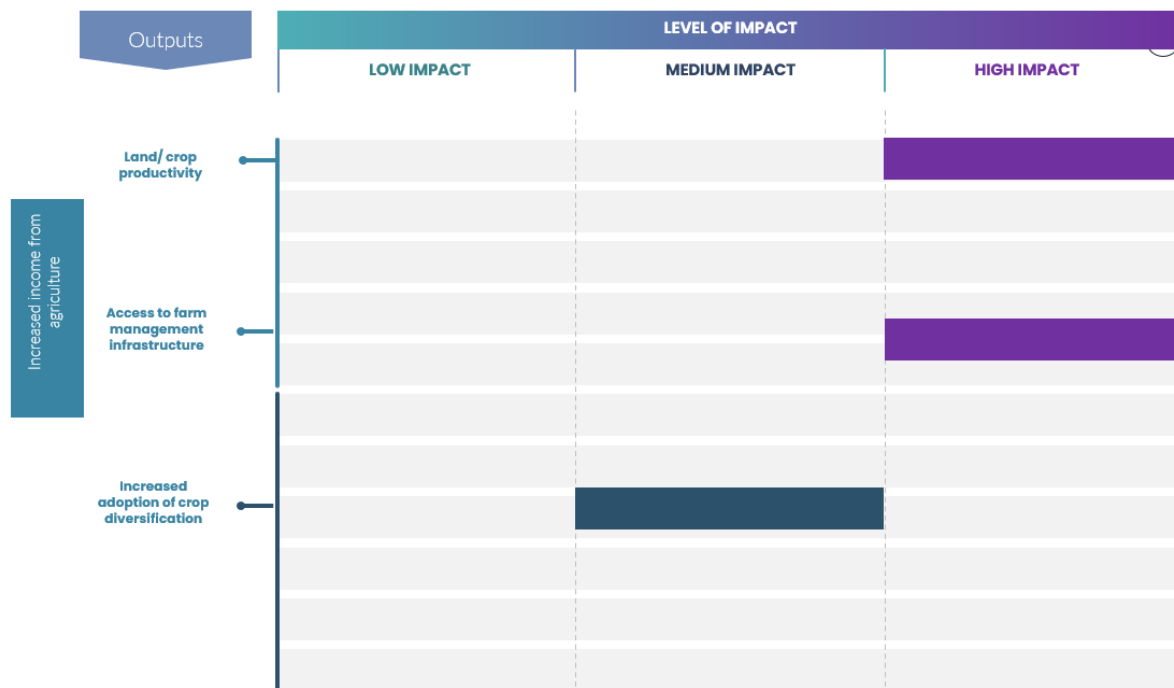
4.2.1. Effectiveness and Impact

The interventions by HRDP have resulted in achieving low to high impacts across different output indicators under the project intervention in the project clusters of Dhule. In summary, the following indicator boxes show in which outcome indicators the programme has performed well. While there has been a high level of impact on income from crops, adoption of mixed cropping with pulses and improved access to water for irrigation, the impact on increasing land under irrigation had a low impact and the adoption of clean energy solutions such as biogas had a medium level of impact.

Image 1: Check dam, Velane village



Figure 6: An overview of project effectiveness and impact in natural resource management (based on the quantitative findings)



Farm management for agriculture

Since the selected villages fall drought-prone, multiple interventions had been taken up for farm management for enhancing the production, productivity and farm-level incomes. Under the HRDP interventions, farm management practices such as mixed cropping and pulses plot, multi-layered cropping and organic vegetable plot were introduced. One of the beneficiaries during qualitative findings quoted, ***“mixed cropping, multi-layered cropping and pulses plot have not only improved the productivity of crops, but they have also been vital in conserving soil moisture and enhancing soil fertility”*** Including pulses in cropping systems serve the dual purpose of fulfilling dietary

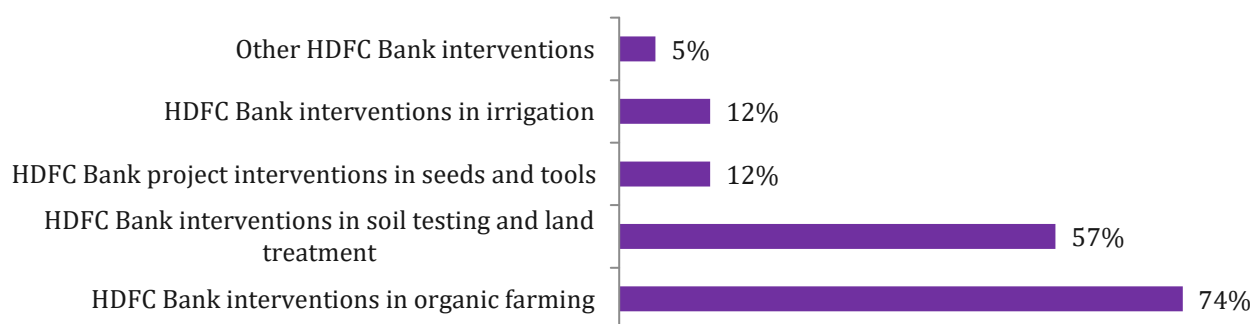
requirements as well as improving soil health. Around 75% of the sample beneficiaries stated that they had changed their cropping systems to introduce pulses and oilseeds.

Image 2: FGD with organic farmers, Vani village



Natural farming practices like organic vegetable cultivation have reduced the dependency of farmers on chemical fertilizers as well as the usage of water and other inputs. Further, seed distribution under the intervention has improved the access of farmers to agricultural inputs. Around 59% of the sample beneficiaries stated that they have benefitted due to a reduction in input costs. As can be observed from the figure below (See Figure 7), HRDP interventions had a key role to play in the reduction of input costs.

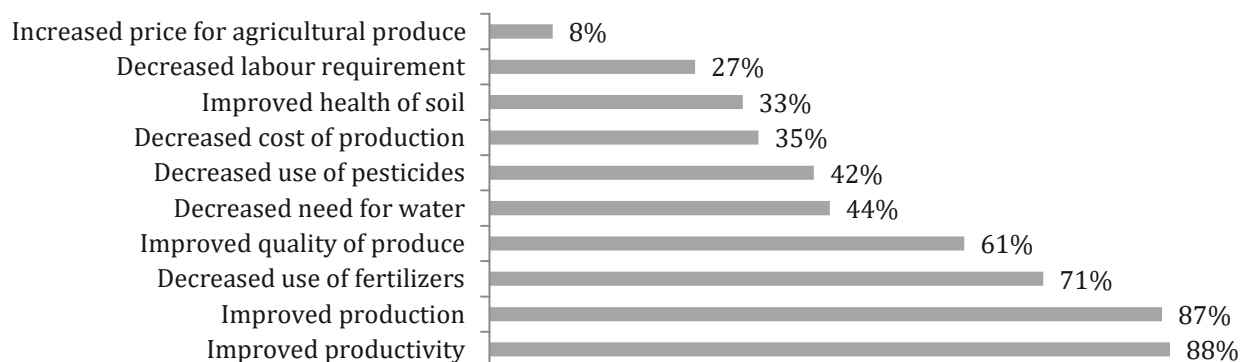
Figure 7: Reasons for the reduction in input costs (% respondents) (n=41)



Water management for agriculture: Field-level findings have ascertained those activities such as the construction of check-dams, Nala deepening, bore well deepening and well recharge have led to an increase in water availability in villages in Dhule district that was covered under HRDP intervention. Major food crops grown in the district are jowar, bajra, maize, wheat, groundnut, cotton and sugarcane. With improved water availability, farmers have been able to diversify to the cultivation of pulses such as moong, and gram as well as oilseeds such as groundnut and soybean. Further, due to on-farm promotion of and support for sprinkler and drip irrigation to the farmers, it was stated by the sample beneficiaries that water used for irrigating crops has reduced as well as water savings has improved.

Organic farming: Dhule district has been recognized as the land degradation hotspot of Maharashtra. Further, scarcity of rainfall adds to the woes of farmers. As mentioned earlier, recurrent droughts have put farmers at the mercy of rainfall. Hence, organic farming was promoted under the HRDP intervention for soil health management so that farmers could get better returns on their investments. Furthermore, since the majority of the farmers are small and marginal, the input costs of farmers on chemical fertilizer were high. Organic farming has led to a reduction in the use of chemical fertilizers in the selected villages (See Figure 8).

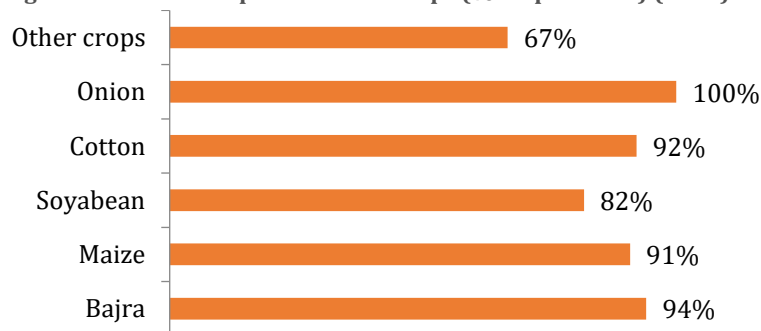
Figure 8: Perceived benefits of using natural fertilizers (% respondents) (n=98)



Increase in production

HRDP interventions have led to an overall increase in agricultural production in the selected villages. While there has been an increase in the production of crops that were already being grown by the

Figure 9: Increase in production of crops (% respondents) (n=98)



sample beneficiaries, there has been an increase in the production of pulses that were introduced during the interventions. The average production from agricultural crops such as bajra and cotton crops increased from 25 to 41%. The HRDP interventions for improved irrigation and seed distribution have been pointed out to be the key reasons for the

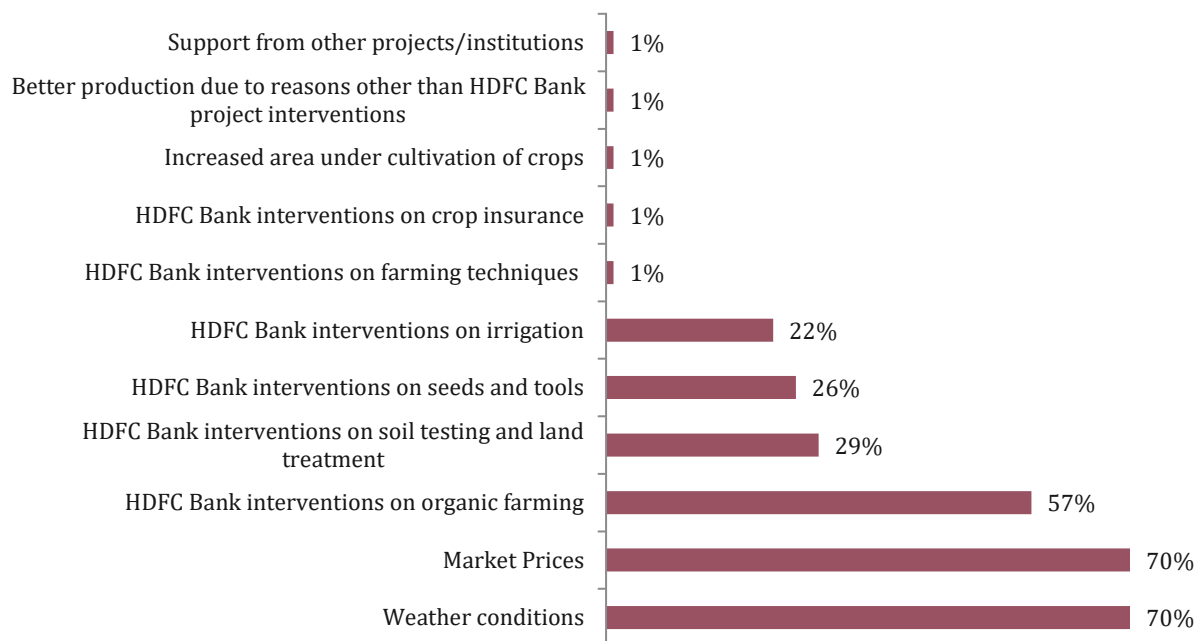
increase in the production of bajra and cotton. Further, the average production of other agricultural crops (such as vegetables) increased by 67% (See Figure 9).

Increase in agricultural income

The field-level findings indicate that there has been an overall increase in income. The **net annual agriculture income increased from Rs. 48,562 (Rs. 33,750 median) to Rs. 65,908 (Rs. 50000) which is an increase of around 36% (mean) and around 48% (median).**

Other than the role of weather conditions and changes in market prices, HRDP intervention in organic farming, land treatment, seed distribution and intervention for micro-irrigation (such as drip and sprinkler) have been attributed as the reason for the increase in income (See Figure 10). **Further, 93% of the sample beneficiaries stated that there has been an increase in the status of profit from agriculture. On performing the one-sample t-test, as the significance value is less than 0.05, it can be concluded that there has been a significant increase in income as compared to the baseline median value.**

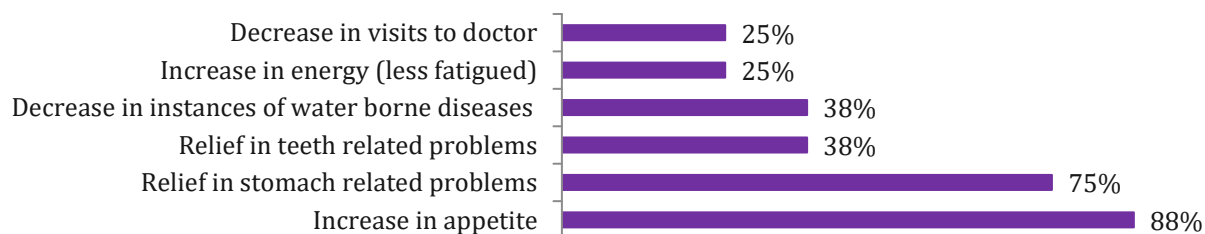
Figure 10: Reasons for the increase in agricultural income (% respondents)



Drinking water management

Under the HRDP interventions, drinking water management was one of the focus areas to improve the availability and access to drinking water for households. Activities such as borewell repairing, installation and repair of community taps, repair of hand-pumps and others were taken under the intervention. Water availability prior to the project was for a period of 8 months on average annually. Due to the project interventions, water availability improved throughout the year. All the sample households covered under the programme have benefitted due to this intervention. Some of the key benefits highlighted by sample households were an increase in appetite and a decrease in the occurrence of diseases (See Figure 10).

Figure 11: Perceived benefits of drinking water management (% respondents) (n=8)



4.3 Skill training and livelihood enhancement

In the project area, a significant proportion of the population depends on agriculture for its livelihood. This sector has been the single largest provider of employment to the rural people in the block. Animal husbandry is the next largest provider of livelihood to the farmers in the area and has been helping them to reduce pressure on agriculture. Apart from that, wage labour contributes to the bulk of the livelihood of poor and vulnerable households, especially for the small farmers and landless who are mostly unemployed or underemployed. It has been observed that poor families need diverse income sources to broad base their livelihood to sustain themselves. Considering that livelihood diversification in the project area could lead to an overall economy-wide increase in productivity and facilitate poverty reduction, the HDFC Bank's Parivartan project focused on skill development and livelihoods for the sections in the area that belong to traditionally marginalised social and occupational groups in the 8 villages of Shindkheda block of Dhule district.

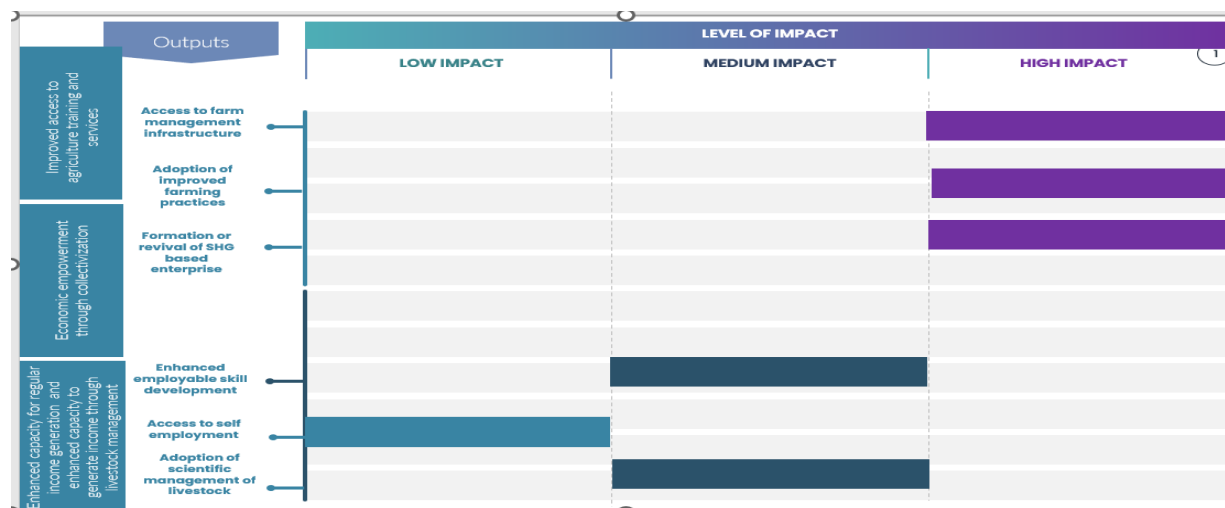
Table 6: Activities covered under skill training and livelihood enhancement

Activity Category	Activities
SHG-Based Women Empowerment	Strengthening of SHG, development of seed banks
Agriculture Training and Support	Training on agricultural practices, support for farmers association group
Livestock Management	Livestock vaccination camp, nutritious fodder plot for animals, green fodder plot, hydroponic unit for nutritious fodder, established 100 backyard poultry units, livestock rearing (goatery) – establish 8 goat rearing units, veterinary training for youth (24)
Entrepreneurship Development	Promotion of enterprises such as papad making unit, masala unit, broom shop, puncture and tailoring shop etc.,

The activity-wise number of beneficiaries covered during the study is given in the methodology and sampling section. Further, the relevance, effectiveness, and sustainability of activities under the theme of 'Skill Training and Livelihood Enhancement' have been discussed in detail.

4.3.2 Effectiveness and Impact

Figure 12: An overview of project effectiveness and impact and skill training and livelihood enhancement (based on quantitative study)



Seed banks run by self-help groups: The project tried to build the skills of the members and helped them develop their capacities to gain a voice in local governance institutions, and better negotiate for improved services with the strength of the group behind them, the main focus all the while being on strengthening the capacities of the SHGs to engage in microenterprise development. For this, existing SHGs that were set up way back in 2010 and earlier under the NRLM or NGO programmes were rebuilt into robust grassroots institutions of their own by providing them with necessary inputs and developing further linkages with banks and convergent initiatives. The training was undertaken during the project implementation period to build vibrant community institutions of rural poor household women, which through member saving, internal loaning, regular repayment and economic activities become self-managed institutions.

A central thrust of the HDFC's project at Dhule was to strengthen and enable women's group-based institutions such as self-help groups to promote savings and build productive assets of their own and particularly to work on seed banks. As a part of this, 16 seed banks were strengthened in the project area. Traditionally women farmers have been producing, preserving and exchanging seeds for a long time. This helped retain seeds from each harvest and thereby preserve the local genetic materials. The erosion of this practice over time has led to poor availability and access to good quality seeds which has adversely impacted agricultural productivity and input costs as the farmers need to buy seeds every season. The project, therefore, played an important role in improving the availability and use of quality seeds and thus contribute to improved food security, especially during drought.

The activity of the seed bank entailed improvements in seed storage at the community seed bank (embedded at the women's SHG level) to avoid considerable losses in seed storage often of the order of 20%. The community sees this mechanism as a social safety net for seeds. Care has been taken that the poor-quality seeds after a bad harvest are not included in the seed bank. The SHG mandated that 10% of the overall seed production should be deposited in the seed bank so there is enough seed availability there. The SHGs took a keen interest in promoting local cropping practices as well as introducing mixed cropping practices among farmers. Encouraged by the functioning of the seed bank, the SHGs are planning to develop a nursery in the near future.

Apart from seed banks, these informal groups formed by women address their routine credit needs for consumption purposes and production. The HDFC project tried to improve the thrift and savings habits among the group members. The quantitative survey done as a part of the impact assessment indicates that 100% of the respondents stated that their SHG regularly conducts the following activities: SHG meetings, bookkeeping, savings activities, meeting minutes preparation and attendance records. All the respondents stated that their SHG is currently active.

The work on women's self-help groups was intended to bring financial independence to women as well as to meet the credit needs of women who were planning to set up various profitable activities. The savings of the women that are pooled together create a fund from which vital operations can be carried out. The members of the group can borrow the money to meet their consumption and production needs at 2% interest per month. **Members attend monthly meetings and save anything ranging from Rs. 50-200 a month** (varying for groups). The programme has worked towards women's empowerment by strengthening the self-help groups in the intervention villages. Each SHG has an average of 10-12 members engaged in different activities such as savings and lending. **The average corpus of the groups is around Rs. 75000.**

Once the group achieves sufficient collection, the loaning mechanism begins. Bank accounts have been created for these groups and the group-based approach has shielded the women from exploitation by money lenders by providing them with a loan at a low interest. This way the members

have been able to accumulate capital by way of small savings. Inter-lending in the groups has helped some women start small businesses.

57% of the respondents reported that the groups do internal lending. Because most of these groups were not linked to the banks, the institutional credit facility was not available to the poor women in the group when they needed it. The project also helped in providing support to the SHGs to open savings accounts in banks if they did not have one. The respondents stated that the benefits of being an SHG member were income generation (100%), personal savings (100%), an increase in confidence (100%), and getting a loan with less interest amount (86%). Of these, 100% of respondents were involved in goat farming and 14% in poultry.

Many members reported in the qualitative study, the positive effects the project support had on other activities (income generation, literacy, child care and nutrition, etc.). Also, women's awareness about other issues of concern such as health, hygiene, their rights and entitlements etc., has improved and their decision-making power has gone up, including in economic aspects. The project has successfully worked on financial inclusion, social inclusion and mobilization. Under HRDP, SHGs were strengthened through various exposure visits to the microenterprises and conducting training sessions to help members in better savings and lending loans. This was done as often in the absence of adequate business skills and financial linkages, the micro-enterprises in the non-farm sector failed or became stagnant.

In the quantitative survey, of the 410 respondents, 1.7% stated that their households had received support for SHG development and microenterprise support from HDFC. 100% of the respondents who received support on microenterprise development work noticed an increase in their income due to the SHG enterprise/business activities since the project started. Support provided for the development of skill-based entrepreneurship helped diversify the portfolio of economic opportunities available to rural households, thereby enabling greater rural income. **The average monthly income from SHG before the project started was Rs. 1000 (median Rs. 2000) while the average monthly income from SHG after the project was Rs. 4500 (median Rs. 4757), as per the quantitative survey. On performing the one-sample t-test, as the significance value is less than 0.05, it can be concluded that there has been a significant increase in income as compared to the baseline median value. ($p < 0.05$ at 95% confidence interval).** Since the activity was with women, it also brought in changes in intra-household decision-making, and women are taking up a key role in supporting livelihoods, but they continue to lack adequate access to finance, market and tailored extension services to move up in the value chain.

VSP has been providing support to beneficiaries to select a business based on enterprise planning and analysis of the enterprise environment taking into consideration aspects related to village size, distribution of population across villages, state of infrastructure and amenities especially the proximity to markets and raw materials. The preference of SHGs was for these enterprises - papad making, paper plate making/reaming, electric products etc. SHG members have contributed around 40% cash contribution, and have been offered the ownership of the business.

14% of the respondent households received benefits related to skill training as well as enterprise development. The percentage of respondents who had attended training as a part of the HDFC Bank project were (a) veterinary vocational training (36%), (b) training on financial literacy (credit linkages, SHG & women-headed enterprises (31%), (c) communication skills (5.1%) and (d) training for business management (bookkeeping, marketing etc., 28%).

70% of the respondents stated that they were able to apply the skills they gained through this training while 18.2% said that they were not able to do so; 12% of the respondents stated that they did not gain any skills. As regards a change in income after the application of the skills, 67% reported

an increase, 3% stated that there was a decrease, 18% said that there was no change and 12% were not sure of the change.

The other key benefits of the training received as per the respondents were skill development for self-employment (91%), improved confidence to apply for jobs (42%), awareness regarding job opportunities (21%), confidence to establish enterprise (24%) and helped in getting a job (6.1%). As per the respondents, the project support has helped them in the following ways in establishing linkages with an employer – (a) Information regarding career portals (100%), (b) Confidence to apply for job opportunities (100%) and (c) Skill development to get a job (100%).

Support for setting up of need-based micro-enterprise and small community enterprises (such as papad making unit, masala unit, paper plate making units, milk processing units) as joint liability groups (JLGs) through exposure visits and training sessions for SHG members has largely resulted in the empowerment of women as they are more aware of the enterprises they can start. They have expressed a motivation to engage in this sector, but are facing issues of scale and non-accessibility to markets.

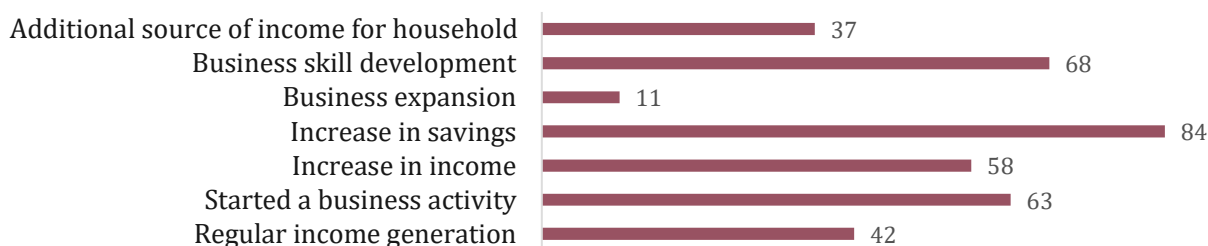
Figure 13: Project support in enterprise development (n=19)



The involvement of respondents in enterprise or small businesses at present were goat production (14%), poultry (17%), dairy-based enterprise (21%), grocery shop (1.7%), other (3.4%) and none (43%). As per the respondents, **14% mean (12% median) of the respondent’s current personal monthly income comes from the enterprise.**

The average monthly income from the enterprise before the project was on average Rs. 4300 (Rs. 2000 median) which increased to an average of Rs. 7374 (Rs. 4500 median) after the HDFC Bank project. On performing the one-sample t-test, as the significance value is less than 0.05, it can be concluded that there has been a significant increase in income as compared to the baseline median value. (p<0.05 at 95% confidence interval).

Figure 14: Benefits gained through project support in enterprise development (% respondents) (n=19)



Agriculture support and training: The project was designed to support small-scale farmers to have better access to basic inputs, services and skills, such as seeds, fertilizer, machinery services, market information, credit, agriculture and business skills. The aim was to improve their production,

household income, profitability and marketing aspects. The broad set of activities under this comprised training on agricultural practices mainly agronomic and management advice, input support, assisting farmers with market information and building skills for the creation and strengthening of farmers' associations.

Excessive use of agrochemicals like fertilizers and pesticides over the years has reduced the fertility of the soil, leading to a decline in crop yield. Due to inadequate soil management, the fertility of the soil has deteriorated over the years because of which farmers were left with no option but to plough the land with the help of a tractor (as now soil cannot be loosened with the help of bullock carts). This has increased the cost of cultivation over the years causing a reduction in income. Prior to the HDFC project, farmers cultivated cotton on the vast majority of land, whereas vegetables and crops like maize and bajra were cultivated on small stretches. The cultivation of cotton requires a lot of harmful chemicals and pesticides to control pests and boost production. There has been a continuous rise in the prices of pesticides and fertilizers used in conventional farming. Also, as cotton is a water-intensive crop, it increases the water requirement for cultivation. The excessive use of chemicals also worsens soil health and damages its fertility.

Organic farming was introduced in the village with a long-term vision of reducing the cost of agricultural production, improving the income of the farmers and enhancing soil health. The inputs required for organic farming such as compost, green manure or recycling of farm waste are easily available at the household level.

As a part of the project, the following initiatives were taken up:

Agriculture Resources Centres: These were set up to provide advanced farming equipment to improve the income of households by increasing the productivity and profitability of farming. The project provided 50% cash support while the youth groups functioning in the village provided the rest to establish these units.

Bore Well Repair: The activity was done in pockets which receive less rainfall and face drinking water scarcity. Three deep tubewells were repaired with the involvement of the community (over 50% contribution) under the HRDP project.

Crop Protection Unit: VSP introduced this agri-based innovation to reduce input costs and increase farm production through the use of organic manure. Prior to the HRDP project, farmers in the project villages were dealing with the increased cost of farm inputs like fertilizers and chemical pesticides, which impacted their net income adversely. VSP had been promoting sustainable agriculture in Vidarbha since 2005. Under HRDP, VSP focussed on the intervention of the crop protection unit as a part of which farmers prepared their own fertilizers of good quality. The technique was transferred to the farmers through training and demonstration. Farmers saved up to Rs. 120000 annually, as per an estimate by VSP. About 100 livestock holder beneficiaries whose crop protection units were functional produced slurry as fertilizer. A total of 160 units have been established in the project area and there is a high demand for them from other farmers.

Drip and Sprinkler Unit: As a part of the HRDP project, assistance was provided for the installation of micro irrigation systems. The activity helped use water efficiently and improved agricultural productivity apart from strengthening the livelihoods of small and marginal farmers in the project villages. The project made a provision for unemployed youth and other farmers/ user groups to purchase the sets under the head of the farm implements with 70% project support. The user groups were provided support to start their own micro-entrepreneurship and provide the units for rent to farmers who needed them. The sprinkler irrigation systems were introduced with the objective of economically utilizing the available water for irrigation to bring the maximum possible area under irrigation.

Organising the Farmer Melawa: At the commencement of the Kharif cropping season, farmer melawa was conducted with over 500 farmers from 8 target villages. These farmers received inputs on various aspects of agriculture from Agricultural Colleges/Institutes and advice from agricultural experts. The farmer melawa is held based on the cropping season, type of crop and farming practices. Above 50 farmers from each village (8 batches of 50 farmers each), have been provided with better knowledge of non-chemical diversified agricultural practices. Inputs have been provided on the selection of cropping patterns, nutrient management, and pest management with an ultimate focus on cost reduction and productivity enhancement. Most of the sessions have been scheduled in the pre-Kharif or pre-rabi period so that sowing and other plant operations do not get affected by training in between crop cycles. The basic idea was to make them aware of the long-term benefits of these agricultural practices. The final objective of the melawas was to shift more and more farmers from high-risk chemical farming to low-risk and sustainable organic farming. Also, VSP has set up a Parivartan Organic Farming Certification Group which was inaugurated with the support of the local HDFC Bank Manager.

Since many farmers in the area were producing lower than the potential yields owing to outdated farming practices, and poor access to credit, technology and extension services. *“Training provided under the intervention improved their skills and knowledge in areas like field preparation, sowing, planting techniques, more efficient irrigation practices, pesticides, crop rotation, improved storage and other post-harvest practices,”* said a farmer during the FGD. The idea was to impart skills that enable farmers to enhance their crop yields, apart from protecting their crops against risks due to weather-related shocks and improve their soil health.

Image 3: Masala making unit, Tikhi village



Image 4: Broom shop, Velane village



As per the quantitative survey, the percentage of households who had attended different training sessions were farmer field schools (50%), farm techniques training (75%), PoP training (25%), natural farming training (25%), cotton processing unit (25%) and crop diversification (25%). 50% of the respondents stated that the training was useful while the rest said that the training was very useful. 75% of the respondents stated that it improved their awareness of sustainable farming practices while 50% stated that it helped in input cost reduction. The respondents stated that they learnt these farming practices through the HDFC training – (a) application of organic manure (75%), timely application of fertilizers and insecticides (25%), mixed cropping (25%) and natural farming techniques (25%). The respondents are using the following farming practices now – (a) application of organic manure (40%), timely application of fertilizers and insecticides (20%) and crop diversification (20%).

The respondents noticed the following improvements after initiating these farming practices – an increase in income (100%), an increase in productivity (75%), reduced input cost (25%), improved soil health (75%), improved pest management (25%), reduced crop loss (50%) and ease of farming (50%). **Respondents stated that their annual income had increased due to the agricultural skills they learnt since the project started. The increase was Rs. 10500 (mean) and Rs. 10000 (median) respectively.**

The other key benefits of the training received were – (a) skill development for self-employment (100%), (b) improved confidence to apply for jobs (25%) and awareness regarding job opportunities (25%). 20% of households are members of farmer groups or associations, all of which were set up as a part of the HDFC project. As regards the kind of support received by the group through the HDFC Bank, all respondents stated that they received support through group training and bank linkages. All respondents stated that they see improved access to the market as a benefit of being a project-supported group member.

Institutional Development: As a part of the project, eight Village Development Committees (VDCs) set up by the Gram Sabha (in each GP; 9 villages, 8 GPs, 9 VDCs) were strengthened. HRDP supported the awareness camps and rapport building in the project area. The VDCs have around 12 to 24 members depending upon the village population size. The composition of the VDC has been developed in accordance with the amendments made in the Bombay Village Panchayat Act to be inclusive and to create a broad-based local leadership. The HRDP project has ensured that 50% of the membership is given to women. As a part of the project, the draft GPDP prepared by the Village Development Committee has been placed before the Gram Sabha, which prioritises the proposals as per the situation analysis report and available funds. In the project villages, the GPDP has included the integration of an FPO in the village. The proposal as a part of the GPDP has gone for estimation to the technical wing of the Block Development Office.

This way the project tried to seed the concept of FPO formation to organize the farming community so that they could access information about the market, consumer preferences, quality standards, marketing outlets, costing, inputs, organic inputs etc. Based on the product to be aggregated, the farmers would decide on the cropping patterns, input application scheduling, water management, harvesting, storage and organised bargaining and marketing. This could provide end-to-end support and services to the small farmers, cover technical services, marketing, processing, and other aspects of cultivation inputs and bring the farmers together. The skills and expertise of the farmers would also get a boost, but most importantly they would get support for marketing.

Livestock Management: A key thematic intervention under the skills and livelihoods portfolio was livestock development, which helped supplement unpredictable crop incomes in this rainfed area through sustainable livestock systems. It supports their livelihood and also helps in farming activity. 50% of households received benefits for livestock management. The median number of livestock owned by each household now is 2 cows, 2 goats, 2 buffaloes and 20 poultry. As per the respondents, the various types of livestock owned by them were cows (3.9%), goats (19%), buffaloes (2.9%) and poultry (75%). The respondents received support for project services for the following livestock group – cows (3.9%), goats (19%), buffaloes (2.9%) and poultry (75%).

The key interventions in livestock rearing and management under the project were:

100 Backyard Poultry Units were established as a convergent initiative under the HRDP project with the support of the Animal Husbandry Department of the Government of Maharashtra. Backyard poultry is a common practice in the area and local breeds that are suitable for the project area were introduced. Each unit is established on a 30 sqft area, each unit costing about Rs. 6880. About 30%

of this cost is shared by the beneficiary. The project provided local breed chicks (25 each per unit) and each beneficiary was also provided with a month of nutrition feed. Further, under the project, all types of vaccination, medicine and drinking pots have been provided. Training has been provided to 100 beneficiaries to increase poultry production and market linkages. The poultry units have begun egg production and each family gets an income of around Rs. 160 to 180 per day from this. A family gets an income of around Rs. 5200 a month from poultry.

8 Goat Rearing Units were provided to women who formed a group and operated as a goat rearing unit, where the secondary beneficiaries within the group received goats from the primary beneficiaries. When three goats were born, one was passed on to the secondary beneficiary under this revolving mechanism. 8 SHG groups contributed to the order of 50%. As a part of the project support, 8 local breed goats were provided and 8 goats were purchased by the SHGs (one goat per SHG). At present, there are a total of 120 goats in the project area for the ultra-poor and landless community to enhance their livelihood. A revolving approach is being used under the project. The families depend on the goat for their livelihood needs (selling goats for meat, also manure for farms) and use milk in their nutrition to reduce protein deficiency among the children and women. Vaccination was provided to the goats as a part of the project through veterinary camps held in coordination with the animal husbandry department. SHG women and other livestock owners participated in the camp with their cattle. Medicines and equipment were also provided. A volunteer introduced the livestock holders to the importance of health checks in a village-level meeting. This has helped the farmers in learning about improved breeds, and feed practices. A total of Rs. 3,60,000 has been generated in the project through the goat-rearing unit, as per VSP's estimates.

Nutritious Fodder Plot for Livestock: An analysis of primary data for the project area indicates that about 45% of households rear cattle and yet, the number of cattle per household is only 1-2. The farming families rear the local breed of cows because of several factors. Although the milk productivity of these breeds is low, people prefer this breed because of its low maintenance cost; high suitability in the climatic condition; and, its bullock is used for agricultural activities. Cross-bred cattle are present but their number is insignificant. The target population under the project avoids the rearing of cross-bred cattle due to higher feeding and costs, and medical cost and their bulls cannot be used in agricultural exercises. Buffalo is not a common animal reared in this area mainly due to scanty water sources and drought conditions. As a part of the project, a special effort was made for raising good quality fodder on some parts of the land to establish promising varieties of perennial fodder grasses on the farm bunds. Nutrition fodder plots (20 plots) were established in 8 project villages. In the fodder plots, corn silage (murchas) and other fodder grasses were planted.

Green Fodder Plot: As a part of the project, 10 green fodder plots have been established in 8 project villages. A total of 20-acre land cultivated under the green fodder plot is providing green fodder to 150 animals in the summer season. Help was sought from Panjabrao Deshmukh Krishi Vidyapeeth (PDKV), Akola for identifying certain promising strains of perennial fodder grasses suitable for the north Maharashtra climate.

Hydroponic units for nutritious fodder helped generate nutritious and green fodder in the short period during droughts. In hydroponic farming, the water level is maintained within the specified range which results in better growth and production for short-term crops. Water is directly supplied to the crop roots so as to ensure the higher-level productivity of crops. Also, hydroponic technology is easily manageable by all types of farmers, it can be also made from local and wasted resources. This is a good option for saline soils in the Dhule district. Ten hydroponic units were established with the support of beneficiary contributions in the project village.

Veterinary training provided for 24 youth: As a part of vocational training, the project provided training to 24 youth (3 unemployed youth from each of the project villages). A three-month-long

course was administered through the professional institute (Sant Gadgebaba Technical Institute) to build their capacity to undertake economic activities and provide support to sustain their livelihood. The course involved both theoretical and practical sessions. Exposure was provided to the veterinary clinic and a tool kit was also provided to them. These trained youth are now providing services in the project area related to goat and poultry health.

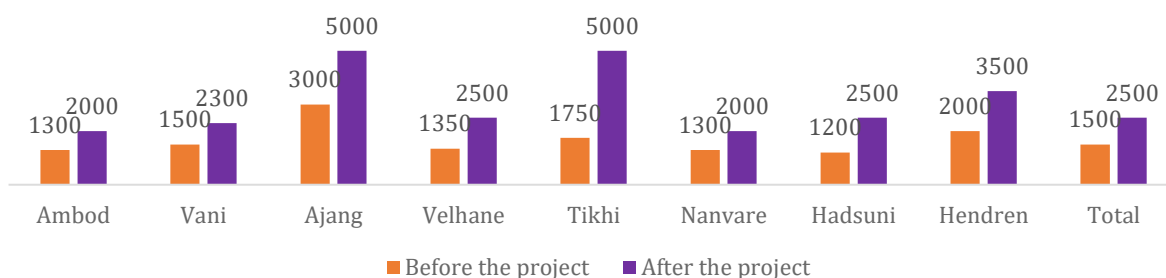
160 Biodynamic Culture & Cow Pat Pit (CPP) Unit was established for the preparation of fertilizer. The technique transfer involved training and demonstration. Each pit produces 40 bags (1 bag is 50 kg) of fertilizer; each bag costs at least Rs.200. From 15 compost pits, farmers have saved Rs. 120000, as per respondents (qualitative study). About 100 livestock holder beneficiaries have produced slurry as fertilizer depending on the functioning of their units. They also saved a substantial amount on fertilizers. A total of 160 biodynamic units have been established in the project area and many more farmers have shown interest in biodynamic unit culture for better farming. Each unit of 40 x 20 feet has a production capacity of 8 tons of biodynamic compost and 100 kg of vermiculture per annum. To support livestock-based livelihood activities, the project has made several interventions around improving livestock health. The project has encouraged the provision of livestock units (goatery and poultry) and focused on their safety and health.

Table 7: Different types of project services received for different livestock: Percentage of respondents (n=206)

Activities	Cows	Buffalo	Goats	Poultry
Vaccination camps	0	33	56	54
Household vaccination service	0	33	44	49
Insemination camps	0	0	0	1.3
Household insemination service	0	17	15	6.5
Livestock health services	50	17	44	43
Animal shelter support (backyard poultry)	0	0	0	4.5
Fodder development support	50	33	50	21
Livestock insurance	0	17	0	10
Livestock management training	17	83	17	61
Awareness generation campaigns	50	17	50	19
Formation of the dairy development unit	0	50	0	0

As per the quantitative study, the interventions on livestock management have shown good results and their outreach was also significant. An average of 14% of the respondents (median being 12%) current personal monthly income comes from the livestock activities that were supported by the HDFC Bank Project.

Figure 15: Average monthly income from livestock (Rs.)(n=206)



A very high percentage of the beneficiaries have shared that there has been an increase in income

due to the support for livestock management cows (67%), buffaloes (83%), goats (77%) and poultry (74%). On performing the one-sample t-test, as the significance value is less than 0.05 it can be concluded that income has significantly increased as compared to the baseline median value. ($p < 0.05$ at 95% confidence interval). The figures for the **median monthly income prior to the project and after the project are Rs. 2096 and Rs. 3415 indicating an increase of 63%**.

4.3.3 Case study: Utkrushta papad

Image 5: Papad making unit, Vani village



Papad has been a vital part of every Indian meal and in places such as Maharashtra, a plate of food is considered incomplete without a papad. Panduram Mahila Bachat Gat (Panduram Women's SHG) in Vani village of Dhule district is today well-known name in the village and adjacent areas for production of papad. The SHG dates back to 2010 but had been apprehensive to venture out in big way in microenterprise development due to lack of funding. The HDFC bank project provided them the much-needed support for this. While women had been doing papad making as a home-based activity (manual, handmade process), the setting up of this as a micro-enterprise-based activity in the form of a collective enterprise through installation of the machine for papad making helped increase the throughput significantly.

"With the introduction of the machine, the time and effort needed from us has been reduced drastically. There is no drudgery involved in the process and women are now free to use their time productively. The papad so manufactured is marketed to restaurants and shops at Dhule," said a woman from the group.

When HDFC Bank approached the women, they showed interest in starting a business of their own. The idea initially was to have a machine but when this was done by branding the product as 'Utkrisht papad' suddenly the demand increased. This unit installed did not have enough space/finances to accommodate new machines, members and the ingredients. At that time the project tried to adopt the Lijjat papad model where the kneaded flour is distributed among the members who take it to their homes and make papads and bring these back for weighing and packaging. This had to be discontinued as the quality of the papad varied, and not many women could be mobilised to produce papad on a consistent basis. As of now, the group has not expanded because of these challenges. In the last 18 months of the production cycle, the women have produced around 200 kg of papad and made a profit of Rs. 40000. (@ Rs. 20/kg).

The women micro-entrepreneurs were provided orientation through group meetings, exposure visit, participation in Farmer Melawa held under the HDFC bank project to understand about the business development aspects (packaging, quality control, purchase of ingredients, grinding, marketing) related to the project. The women used the seed money provided by HDFC Bank to purchase the necessary materials and produce the papad for the local market.

The women are now able to make a net profit of Rs. 15-20 by producing one kg of papad. By word of mouth, the group has started receiving new orders and the business is improving. The women involved in the activity are able to live a better life and contribute to the necessities of their families.

4.4 Health and Sanitation

Health and sanitation are essential components contributing to rural development. In the programme villages, diverse interventions for improving health and sanitation were carried out. The period during which the project interventions took place is 2018-2021. Mapping of the villages was done in the initial phase which was later followed by the execution of the programme. During the design of the project, it was observed that villagers do not have access to clean drinking water and there was less awareness about the health and sanitation practices that need to be followed. The intervention focused on creating awareness by organising health camps for villagers and setting up RO units.

Table 8: Activities under health and sanitation in Maharashtra

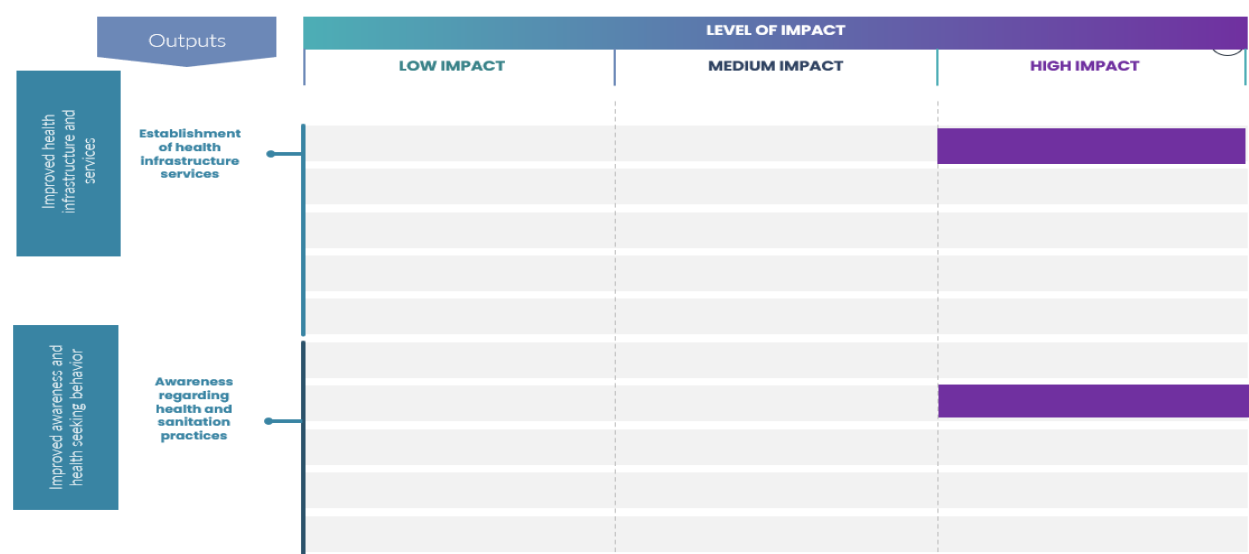
Activity Category	Activities
Health	Health camps, installation of RO filter
Sanitation	Conducting community household awareness session

The activity-wise number of beneficiaries covered during the study is given in the methodology and sampling section. Further, relevance, effectiveness, and sustainability for activities under health and sanitation are discussed in detail.

4.4.1 Effectiveness and Impact

Under HRDP, efforts were undertaken to advocate for the importance of sanitation and hygiene practices so that the early diagnosis of diseases and the incidence of undernutrition among women and children or infectious diseases could be avoided. The health and sanitation interventions in the project area aim to improve health-seeking behaviour among disadvantaged sections of the community.

Figure 16: An overview of project impact and effectiveness in health and sanitation (based on quantitative study)



According to the qualitative findings, as part of the interventions under HRDP, health awareness sessions were organized. On average, a health checkup for 300 members from each village was done. During the health camp, the level of haemoglobin and other primary parameters were checked. Women were made aware of the importance of frequent health checkups, menstrual hygiene, and

importance of balanced diet during pregnancy. The discussion on menstrual hygiene helped reduce the stigma, harassment and social exclusion women faced during menstruation. This also encouraged them to frequently visit the primary health care center in case of any minor health issues. During the health camp, a Covid-19 kit that included sanitisers and an information brochure was provided to the villagers.

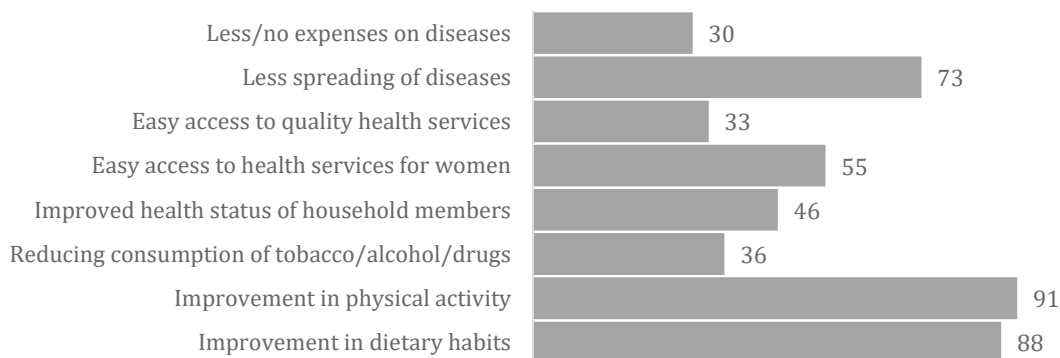
Under the intervention, trained medical personnel from nearby taluka places visited the project villages, where they organised sessions on the various components related to women's and children's health, and encouraged them to adopt healthy practices, the importance of timely visits to hospitals, discuss various health issues women face, and tried to motivate the community to improve its health seeking behaviour.

Under the intervention, two RO purifier units were established in the project area. A qualitative study indicates that before the project intervention, villagers did not have access to clean drinking water (as only saline water was available for drinking). Due to this, they used to suffer from several diseases like kidney stones and joint pain. After the intervention, villagers have access to clean drinking water which has considerably reduced the occurrence of diseases.

Health camps

Through the project interventions, there is a considerable improvement with regard to a better understanding of the health issues in the villages. **Beneficiaries reported that the information given through health camps and community awareness generation sessions helped villagers by improving awareness of health practices and improving confidence to openly discuss the health issues they faced.**

Figure 17: Changes observed after attending health camps/ awareness sessions (% respondents) (n=33)



About 97% of the respondents stated that they availed of health camp services under the intervention. Health camps were organized in each village with the larger goal of improving information, awareness, routine checkups, early disease diagnosis, and the importance of a balanced diet, proper treatment of disease and aftercare. Both preventive and curative aspects were focused on during the health camps conducted in the villages. The various levels looked at were the individual, family and community. Preventive aspects like a balanced diet, nutritious food, food for growing children etc., were addressed at the household level while at the community level, the thrust was on improved public health through better awareness about health issues. 100% of the respondents stated that they consulted the medical service referred during the health camp.

The quantitative study indicates that 8% of respondents availed of health services from the HDFC Bank project. The project health services the respondent's household availed in the last year include – a health clinic for 64% of respondents, health camps/sessions for 79% of respondents and hygiene-

related awareness sessions for 67% of respondents. The various services availed by households at the health camps/clinic conducted as part of the project include diagnosis by 60% of the respondents, medication by 83% of the respondents and referral by 47% of the respondents. All the respondent households consult the medical service referred to under the HDFC Bank project.

Installation of RO unit

A total of two RO units were established in the project area. Qualitative findings report that access to clean drinking water post-intervention substantially improved the health of the villagers. For the installation of the unit, on average, the community contributed Rs. 40,000-50,000 whereas HDFC Bank's contribution was Rs. 1,50,000-1,60,000 on average per village. The repair and maintenance of the RO unit require an expenditure of around Rs. 1000-1500 per year per village. **Even the neighbouring villagers have been benefitting from the purified RO water, wherein the key benefits were improvement in health and prevention of diseases.** While most respondents said during the qualitative study that they had benefitted from the installation of a water purifier unit, they felt that the programme could have focused on some of the bottlenecks such as erratic electricity supply which disrupts the water purifying process, frequent leakages or bursting of the pipeline. This disrupts the regular supply of water for the villagers.

Sanitation

In the project villages, poor standards of sanitation could be a reason for the prevalence of vector-borne diseases. The stagnation of wastewater near houses led to unhygienic conditions, which makes it a perfect breeding ground for mosquitoes. This increases the spread of diseases such as malaria. Under the project, sanitation was an important area and the works done directly through the project and through convergent initiatives include providing sanitation services through household wastewater soak pits, waste management plants, household/community sanitation units (toilets/bathing enclosures), waste collection services and awareness campaigns such as mobile vans.

Only 3.4% of respondent households received support for activities related to sanitation (soak pits, construction of toilets, awareness generation). The percentage of respondent households who avail of different sanitation services were household waste water soak pits (7%), waste management plants (92%), household/community sanitation units (toilets/bathing enclosures) (86%), waste collection services (7%) and awareness campaigns such as mobile vans (7%). As a part of the HDFC Bank project, the sanitation services received include household wastewater soak pits (8%) and household/community sanitation units (toilets/bathing enclosures) (86%).

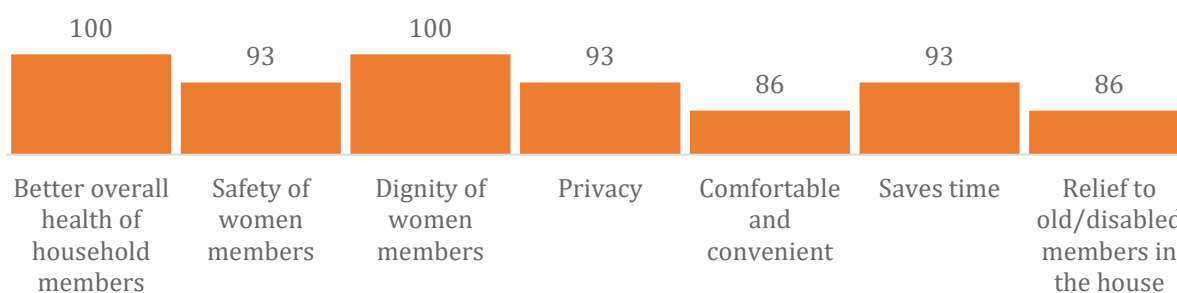
The most important objective of the construction of soak pits in the villages is to improve the hygiene conditions in each village. The construction of soak pits also helps in the recharging of groundwater aquifers in the villages. The construction of soak pits under HRDP was in line with the initiatives and programs undertaken by both central and state governments to ensure hygiene and sanitation in villages.

Under HRDP intervention, household water soak pits were constructed in each village, averaging out to ten soak pits per village. The soak pits were constructed to safely dispose of wastewater or unusable water. These soak pits were constructed in the intervention year 2018. For the construction of soak pits, either the respondent received support from the HDFC Bank in terms of tools or construction materials or partially funded the activity. The soak pits constructed on average were 3 to 4 meters deep. The soak pit was filled with gravel so that when effluent is discharged, the filler material filters the water and other organic material. Whatever water is flowing into the soak pit is subjected to filtration as organic particles settle down at the bottom. Thus, filtered water then gets soaked into the surrounding soil which recharges the groundwater aquifer in the village.

Soak pits are best suited for a soil having high absorption or infiltration rate. **The construction of soak pits proved to be beneficial for the sample villages as they recharged the groundwater and reduced the infestation of vector-borne diseases.** 100% of the respondents who received household waste water soak pits stated that they got full payment for construction. For the activity household/ community sanitation units (toilets/ bathing enclosures), 100% of households who received support said that they got full payment for construction, 83% said that they got full payment for renovation/ maintenance, 75% stated that they were provided materials for construction or renovation, 67% also said that they got help for leveraging assistance from gram panchayat for construction/ renovation. All the respondents said that they received training on the usage of soak pits.

Of the respondents who received support for toilets, 93% of households stated that they were practising open defecation prior to the project while all of these households were using toilets now.

Figure 18: Benefits of sanitation services (n=14)



The practices related to solid waste disposal in the project area prior to the project were poor. 93% of respondents stated that they used to dump in closed pits, 86% used to dump in open areas, 93% used to collect it and burn it in the open, 93% used to undertake waste treatment structures in the village and 79% used to give it to animals. As per respondents, the cleanliness practices one must practice daily are (a) Using toilets instead of open defecation (86%) and (b) Washing hands using soap after using toilets (100%).

Figure 19: Sources from where respondents learnt about these best practices on health and sanitation (% respondents)

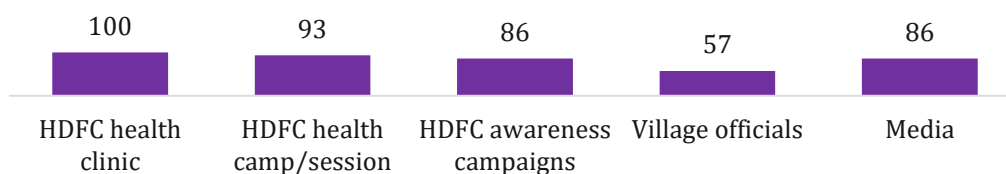
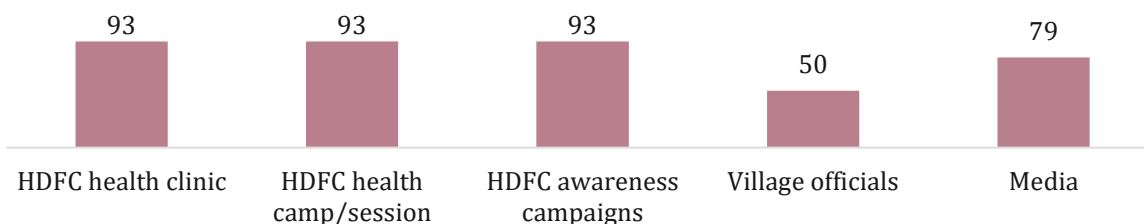
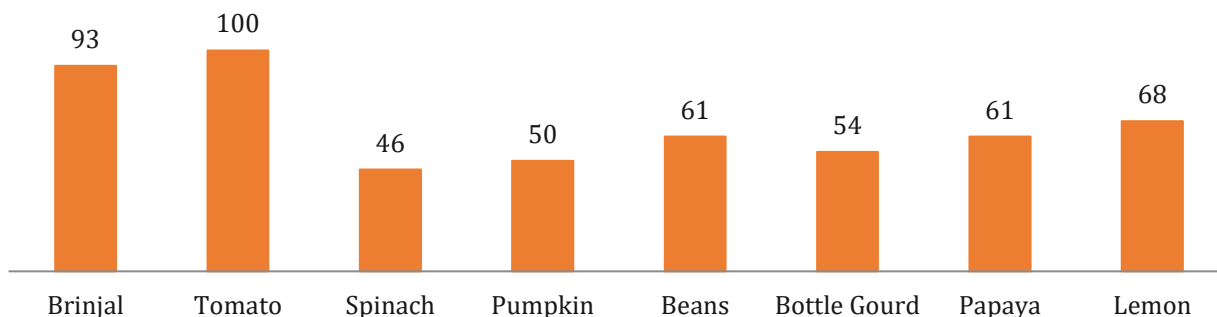


Figure 20: Sources from where respondents learnt about these best practices on liquid waste management (% respondents) (n=14)



Kitchen garden: Around 6.8% percentage of respondent households received support for activities related to the kitchen garden. Of the respondents, the percentage of respondent households who earn income from kitchen gardens was 90% and **the income earned from the kitchen garden per month is Rs. 1408 (mean) and Rs. 1200 (median) respectively.** The type of project support received for kitchen garden activity includes seed sand saplings distribution as per 93% of respondents, training according to 29% of respondents and fertilizers and pesticides per 7% of respondents.

Figure 21: Support received for fruits and vegetables from the project (% respondents) (n=28)



The produce from kitchen gardens is used for self-consumption (71%), selling (3.6%) and both (25%). For those who were using these for self-consumption, there has been an increase of 15%. The fruits and vegetables consumed from the kitchen garden are brinjals (85%), tomato (96%), spinach (56%), pumpkin (56%), bottle gourd (56%), papaya (63%) and lemon (74%). Prior to the project, most people consumed the following vegetables/fruits from the kitchen garden – cabbage (26%), cauliflower (33%), brinjal (81%) and tomato (67%).

100% of the respondents reported that there has been an increase in the quantity of consumption of fruits/vegetables from the kitchen garden since the project started. **On average, the amount saved every week on buying fruits/vegetables is Rs. 288 (Rs. 250 median). If vegetables are sold, on average, households earn an average of Rs. 595 (median Rs. 550) from the sale of fruits/vegetables in a week.** The average land used for the kitchen garden (in square feet) has increased from 16111 sqft before the project to 18755 sqft after the project. The critical benefits of the kitchen/nutrition gardens as perceived by respondents are reduced expenditure on food (68%), additional source of income (68%), development of horticulture (39%), soil fertility enhancement (36%) and improved nutrition (32%). 18% of respondents were highly satisfied with the support provided by the implementation partner/HDFC under the kitchen garden initiative by the HDFC Bank while 82% were satisfied with it.

4.5 Promotion of Education

The work of HRDP in promoting education aligns with the Sustainable Development Goal (SDG) 4, which aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”³ The methods of teaching in school should aim not merely at imparting knowledge in an efficient manner, but also at inculcating desirable values and proper attitudes and habits of work in the students. Teaching methods should provide opportunities for students to learn actively and to apply practically the knowledge that they have acquired in the classroom. ‘Expression work’ of different kinds, must, therefore, form a part of the programme in every school subject. The HRDP project was designed to give students adequate opportunity to work in groups and to carry out group projects and activities so as to develop in them the qualities necessary for group life and cooperative work.

In the assessed programme clusters, HRDP is working on promoting quality education through infrastructure improvements and various other activities as listed below:

Table 9: Activities under education in Maharashtra

Activity Category	Activities
Educational Institutions Development	Educational paintings, school repair work, installation of school library-providing cupboards and books, separate toilet for girls and boys, installation of drinking water posts/RO filter
Awareness Generation	Awareness generation session

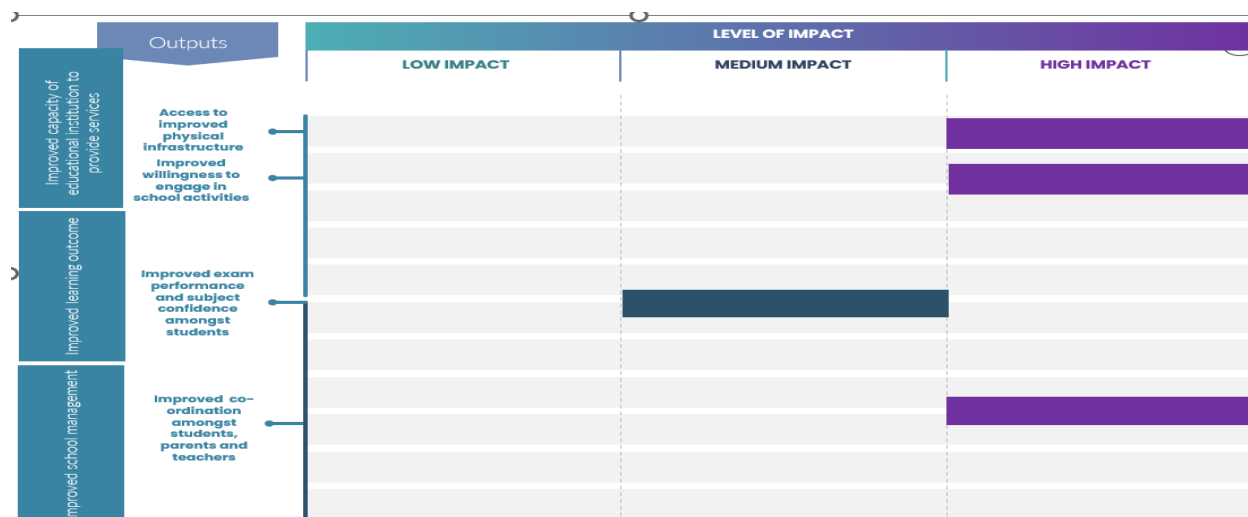
Under the project, eight learning centres were established and a total of 16 classes were decorated with chart pictures, letter cards, point cards, big charts, small charts, charts and other educational materials. The activity-wise number of beneficiaries covered during the study is given in the methodology and sampling section. Further, relevance, effectiveness, and sustainability for activities under education will be discussed in detail.

4.5.1 Effectiveness and Impact

VSP has conducted a two-day training for language and math subjects on pedagogical concepts as a part of the HRDI project. 8 Volunteers and 2 Field Coordinators have taken part in the training which focused on remedial education. The basic premise of this was to enable teachers to help students catch up to their peers and thus prevent academic issues over time which happens when students fall behind. The gap that emerges between their abilities and that of their peers widens over time. As per a two-part educational mid-term assessment done during the HRDP Dhule project, the language assessment results were: Group A-36, Group B-104, Group C-173, and Group D-167. In the math assessment, the results were: Group A-30, Group B-105, Group C-160, and Group D-185. Group A students are extraordinary and learn quickly. Group B included students who were able to do these processes easily and efficiently compared to Group C and D. Group C and D required some additional time to cover the expected developments. The concept of having education volunteers was to curb the widening of the learning gap so learning in other areas does not get affected. Teachers were trained on teaching and learning methodologies and got clarity about children’s monthly and weekly teaching planning. Teachers fully understood child rights and also got an understanding of how to treat children in the classroom.

³ Sustainable Development Goal 4 (SDG 4) | Education within the 2030 Agenda for Sustainable Development (sdg4education2030.org)

Figure 22: An overview of project effectiveness and impact on education (based on quantitative study)



In the Dhule project assessment, the respondents for the education theme include 50 students and 3 teachers. The intervention under HRDP has resulted in achieving better learning outcomes in schools due to upgradation in physical infrastructure facilities such as repairing of school, setting up of library (books and cupboards), making classrooms digital, separate washrooms for girls and boys, RO filters for clean drinking water, setting up of water storage tanks and educational paintings. The improvement in the facilities has been by making learning more joyful by means of educational paintings, providing safe and clean drinking water for children, increase in attendance and decreasing in dropout ratio of students.

Under the intervention, a library was set up in schools and books were provided. Most books were in the Marathi language, which considerably helped in increasing students' interest in learning outside of textbook knowledge. Providing digital screens in the schools under the HDFC project made learning far more engaging and interactive through the audio-visual mode. This made the intervention a successful one as students' learning outcomes improved. During the qualitative study, teachers reported that due to the upgradation of the school infrastructure facilities, they were able to deliver the courses in a more efficient manner and the quality of teaching was also enhanced.

Image 6: Educational paintings and classroom repair, Ajang Village



Teacher's opinion

As per the quantitative study with teachers, the facilities or support provided to the schools through the HRDP/initiative by the HDFC Bank include (a) library set up (books, shelves) as per 67% of respondents, (b) drinking water posts drinking water tanks/RO filter (100% respondents) and (c) learning material support (33% respondents) and (d) sports equipment/training (33% respondents). All the schools had libraries before the project but as for all the teachers, the students used the libraries sometimes. As per 100% of the teachers, the students having library help has made their teaching easier as it is easier for students to find reference material, makes it easier to cover the syllabus faster and makes it easier for

students to understand concepts.

All the schools had drinking water posts/ water tanks before the project. The drinking water posts in all the schools are currently in working condition following the repairs taken up as a part of the project.

100% of the teachers were of the view that students received learning material support (books - textbooks and notebooks, and other learning items) before the project. All teachers responded that the students are currently using the learning material they received through the project. The use of

Image 7: Educational paintings, Ajang village



learning materials helps teachers in improving teaching, according to all teachers. As per the teachers (100%), there were two kinds of support their students received through the learning material intervention of the project (a) makes it easier to hold students' attention and (b) makes it easier to cover the syllabus faster.

All the respondent teachers and students received sports items during the project and were using them now. 67% of the teachers responded that they received capacity-building support of four kinds through the project - (a) training on teaching material development (b) training on innovative teaching methods (c) training/ workshops on child development and (d) education volunteer training. As regards the manner in which this training helped them improve their teaching, 100% of the teachers stated that it improved their capacity to use innovative methods while 50% of the teachers reported that it supported them through teaching material development and a better understanding of child development.

As per the teachers, regarding the manner in which they utilised the skills gained through this training 50% stated that they started preparing teaching material before lectures, while 100% of the teachers stated that this has led to the adoption of innovative methods to keep classes interesting as well as improved engagement with students in the classroom.

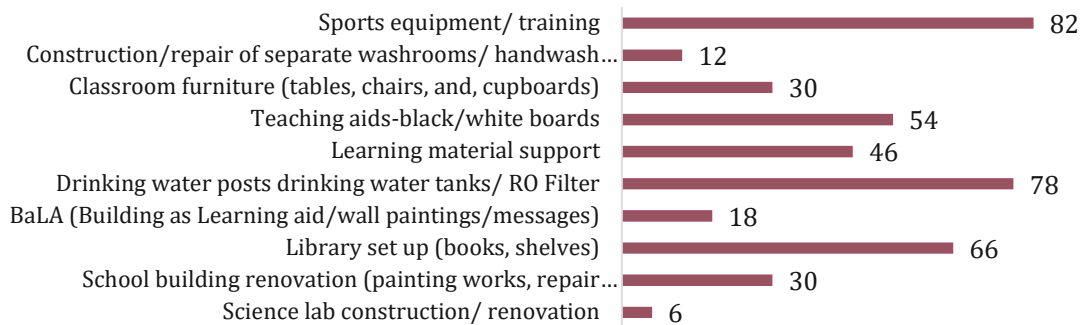
As per the teachers, the awareness generation sessions or school events conducted under the project include (a) 26th June - International Day against drug abuse (b) 8th September - International Literacy Day (c) 10 October - World Mental Health Day (d) 15th October - Global Handwashing Day (e) 2nd Dec - National Pollution Control Day (f) 23rd Dec - Kisan Diwas (g) 8th March - International Women's Day (h) 22nd March - World Water Day (i) Sanitation, hygiene, cleanliness awareness generation session (j) Adult literacy sessions and (k) Computer training.

School Management Committees were established and supported by the HDFC project in the schools as per 67% of the teachers. The project supported these committees by (a) Establishing/ reviving committees and (b) capacity building for members as per 50% of the respondent teachers while all agreed that the support on SMC member training was useful.

These SMCs are not functional currently. The reasons were Covid-19 which disrupted meetings and the low number of members, lack of interest among members, committees were not useful and poor capacity/ skills for management. 100% of the respondent teachers reported that SMCs are beneficial because they lead to the active participation of community members in school activities while 50% of respondents stated that they lead to better coordination of school activities.

Student's opinion

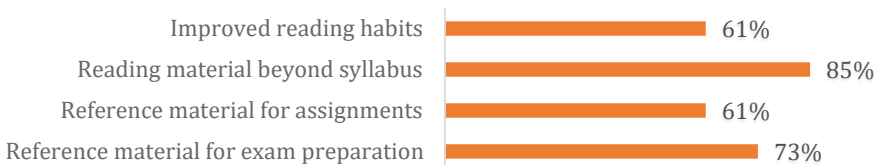
Figure 23: Facilities provided to the school through the HRDP initiative: Student respondents (n=50)



As regards students, 98% of the respondents are in the age group of 11-15 while the remaining 2% are from the 16-20 years age group. The gender distribution of the respondents indicates that 52% are females while 48% of the respondents are males. The class-wise distribution of student respondents indicates that 18% are in class 6, 36% are in class 7, 34% are in class 9 and 12% are in class 9.

As regards student respondents, 67% said that the lessons are more interesting, 33% stated that the lessons are easier to understand, and 100% stated that the syllabus was covered faster and that the lessons are easy to remember. 3% of students use the library every day, while 97% stated that they used it on most days.

Figure 24: Benefits received in terms of improved learning from using the library(n=33)

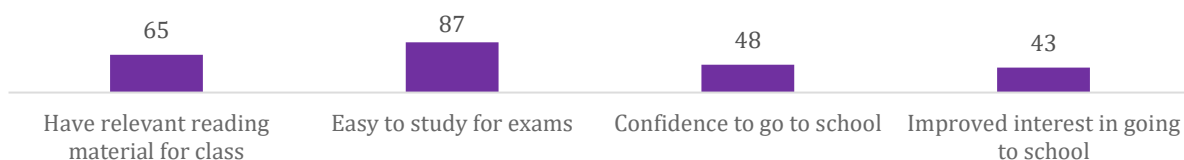


As per the students, the frequency of use of the drinking water posts/ water tanks at their school was 31% stated that they used it every day, 67% said that they

used it on most days and 2.6% use it sometimes. The manner in which the drinking water posts/ water tanks at school benefitted the students indicates that 87% said that it led to fewer health issues, 90% stated that they can now spend more time at school while 79% stated that they benefitted from clean drinking water.

As regards the benefits of learning materials, 56% of the student respondents stated that they used them every day while 43% stated that they used them on most days.

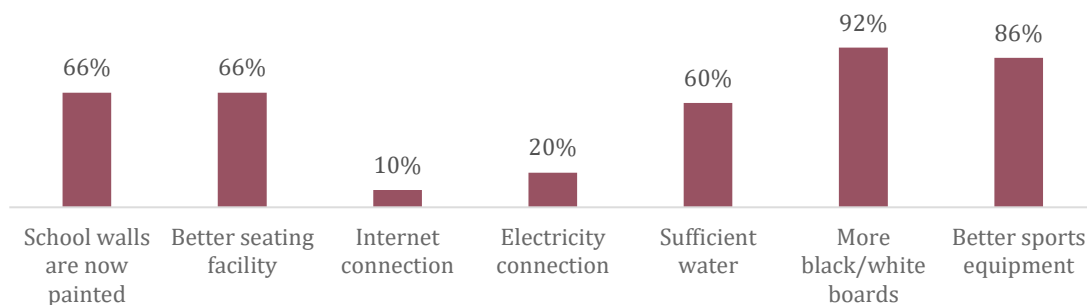
Figure 25: Benefits received from the learning materials: Student's perception (n=23)



Separate washrooms were established for girls and boys. When asked about the frequency with which the students are able to use separate washrooms for boys and girls, 33% said that used it every day while 67% said that they used it on most days. On the benefits of having separate washrooms for

boys and girls, the responses were – (a) Can spend more time at school (83%) and (b) Can attend school regularly (100%).

Figure 26: Improvements in school facilities/buildings in the last 3-4 years: Perception of students (n=50)



4.6 Sustainability and Replicability

Recognizing the myriad benefits of the support provided under the thematic area of ‘Natural Resource Management, the beneficiaries of the project demonstrated the capability to continue with activities such as mixed cropping with pulses, organic farming and micro-irrigation (drip and sprinkler irrigation) after the end of the project. Further, during the qualitative assessments, it was stated that other farmers who may not have been included in the HRDP interventions also took up some of these activities based on self-motivation. Since the activities that were supported under the intervention were designed as per the needs of the small and marginal farmers, the cost of taking up these activities was viable to be taken up individually even with support under the project. Hence, the project has been successful in establishing the viability of these activities and furthering their sustainability and replicability.

Under the thematic area of ‘Skills and Livelihoods’, the project support provided demonstrated the capability to continue even after the program ended. The HDFC bank project interventions focused on setting up micro-enterprise which has resulted in the economic empowerment of the beneficiaries from the marginalised sections. Since the financial and handholding support provided was satisfactory, the micro-enterprises established would ensure the sustainability of the intervention.

Support provided for setting up of the micro-enterprise such as welding shops, broom shops, masala units, papad units, and pottery shops has resulted in economic empowerment of the weaker sections who were working as agricultural labour before the intervention. While the activities carried out to improve agricultural skills have been helpful to the beneficiaries and are continuing after the completion of the project, most of the enterprise development activities have been moderately sustainable in terms of establishing backwards and forward linkages. The training sessions that were provided to the SHG women and farmers have brought a change in behaviour towards the enterprise development or skill development activity. There is a need to continuously build the farmers' capacities and therefore, the presence of trained local persons would ensure the sustainability of the intervention.

The support for setting up micro-enterprises and community enterprises largely resulted in the economic empowerment of women. The women have expressed a motivation to engage in this sector after witnessing returns and a general improvement in their economic conditions. Under this thematic intervention, the project support provided demonstrated the capability to continue even after the program ended. However, an outlet for market linkage needs to be established to ensure that any enterprise-based activity continues after the closure of the project support.

The SHG groups have been functioning well even after the program support has stopped. The women make regular contributions and keep a record of their financial activity. There were cases where the members of the group were not literate therefore, they were supported by others in the bookkeeping activities. More hand-holding support is required to promote leadership skills among these groups so that they can continue to perform their functions.

In terms of sustainability under the thematic area 'Health and sanitation, options for convergence with government schemes should be looked at in close consultations with the community and respective sarpanch of the village. While the programme focused on the need for frequent health checks and timely diagnosis of disease, the intervention was disrupted due to the Covid-19 pandemic as the social gathering was completely avoided. For the women, the issue of poor access to menstrual hygiene products remains as only awareness generation sessions were conducted as part of HRDP intervention in the project villages. This is because sanitary products cannot be easily availed in rural areas, despite having adequate knowledge and information. Although the programme intervention helped in raising awareness, it can become sustainable if village volunteers are trained to collectively organize people and arrange health camps at least once in six months by inviting doctors/experts from Dhule.

The sustainability of the support provided has been considered in terms of establishing structures, technical know-how, usage and maintenance. The interventions in the thematic area 'Education' have performed well in most aspects of the programme, which has resulted in creating a conducive environment by achieving improved sanitation facilities such as the creation of separate washrooms, use of smart classrooms for better delivery of courses, upgraded infrastructure and even the installation of RO filter. All these have had direct positive results and have encouraged higher attendance and enrollment. Two more washrooms were constructed under the intervention. However, the washrooms constructed are not in usable condition as the taps are dysfunctional with no access to water. Similarly, the tank storage capacity of RO water purifiers needs to be improved for a regular and timely supply of water. Besides this, training of school management committees on the importance of effective community participation would entail a sense of responsibility and obligation on the parents towards a better future for their children.

Table 10: Sustainability matrix

Support provided	Structures established	Technical Know-how	Usage	Maintenance
NATURAL RESOURCE MANAGEMENT				
Crop diversification and mixed cropping	✓	✓	✓	✓
Setting up of drip irrigation unit	✓	✓	✓	✓
Organic farming	✓	✓	✓	✓
Nala deepening	✓	✓	✓	✓
Establishment of check-dams	✓	✓	✓	✓
Adoption of clean energy solutions	✓	✓	✓	✓
SKILL TRAINING AND LIVELIHOOD ENHANCEMENT				
Livestock management	✓	✓	✓	✓
Agricultural training and services	✓	✓	✓	✓
Promotion of micro-enterprises	✓	✓	✓	X
Strengthening of SHG-based enterprises	✓	✓	✓	X
HEALTH AND SANITATION				
Health awareness input session and health camp		✓		
Installation of RO water purifier	✓	✓	✓	X
EDUCATION				
Educational paintings, school repair work, installation of school library- providing cupboards and books, installation of drinking water posts/RO filter	✓	✓	✓	✓

Smart class	✓	✓	✓	X
Separate washrooms for girls and boys	✓	✓	X	X
Awareness session on health and sanitation for students	✓	✓	✓	✓

4.7 Holistic Rural Development Index (HRDI)

HRDI is a composite index developed to measure and rank the clusters and thereby the NGO partners based on their performances on key outcome indicators across these domains. HDFC Bank in its document explaining HRDI states that since the aim of HRDP was to achieve holistic rural development through a multitude of interventions that would lead to overall improvements across related dimensions and therefore the programme introduced significant variability in the interventions. Therefore, it was not possible to ascribe a single impact indicator that might be able to accurately capture the overall performance of HRDP.

Since the aim of the index was to create comparability across the various clusters, similar indicators were used for the calculation of HRDI in the project area in Dhule, Maharashtra. Basis our calculation, the HRDI for the studied clusters is presented in the table below, since the programme did not have an available baseline, the baseline was captured through recall during the study.

The index above indicates an improvement in various indicators in the project area over the baseline. Typically, HRDI comprises nine key performance indicators selected from the four domains of focus of the HRDP. The indicators selected were based on their relative contribution to the final expected outcome across all domain-wise interventions. Most of the indicators were found to be relevant for the study in the Dhule project but some needed modifications in accordance with the programme and also in accordance with the study design and information collected. The HRDI score for NRM is negative for which bad weather conditions can be one of the determining factors. According to qualitative findings, although the quality of interventions was satisfactory, due to erratic rainfall, farmers could not see visible outcomes.

Domain	Category	Value
NRM	Baseline	0.09
	End line	0.08
	% Change	-0.11%
Skill and Livelihood	Baseline	0.08
	End line	0.17
	% Change	11%
Health and Sanitation	Baseline	0.13
	End line	0.23
	% Change	76%
Education	Baseline	0.17
	End line	0.17
	% Change	0%
Overall HRDI	Baseline	0.46
	End line	0.66
	% Change	43%

5. Conclusion

Based on the observations and analysis of primary and secondary information presented in the report, the study presents the following conclusion:

- The NRM activities taken up for farm and water management in the Dhule district have been effective in addressing the water-related challenges in the agriculture sector and enhancing farm productivity and income. The area under cultivation of crops like bajra and cotton increased in the selected districts. The productivity of crops such as bajra, maize and cotton has increased in the range of 25 to 41%. The popularization of mixed cropping with pulses has led to the adoption of pulse production. Soybean and Gram have been taken up by some of the farmers. Around 93% of the sample beneficiaries stated that there has been an increase in the status of profit from agriculture. Further, the net annual agriculture income increased from Rs. 48,562 to Rs. 65,908 which is an increase of around 36%. The activities undertaken under the HRDP programme demonstrate the ability of planning and design programmes based on the suitability of the projects that can significantly enhance the provision of natural resources. However, the willingness and ability of target groups to change their behaviour regarding changing their land use practices are critical factors in the sustainability of programmes implemented at scale.
- The interventions taken up under livestock management benefitted the respondents by creating an additional source of income for livelihood. To ascertain the sustainability of the intervention, follow-up on the project is important.
- The programme theme aimed at achieving women's empowerment through the creation of seed banks and SHG-based enterprises such as oil mill units, masala-making enterprises etc. This has improved women's confidence to further expand their businesses and helped in increasing the socioeconomic empowerment of women at household and community levels. Enterprises established under the SHG and at the individual level have substantially improved the average monthly income of the beneficiaries. The qualitative study found that the women participating in the program did report greater economic empowerment and an improvement in status/ quality of life and their overall agency. Farmers under the intervention were trained in manufacturing and use of natural fertilizers like neem ark, Gasparini ark etc. Farmers have started replacing chemical fertilizers with natural fertilizers.
- Earlier villages in the intervention area did not have access to safe and clean drinking water. Due to saline water, they suffered from various diseases. With the installation of RO filters, not only the villages under the HDFC bank project have been benefitted but also the neighbouring villages now have access to clean drinking water. The awareness generation session and the health camps conducted have improved awareness of the importance of a balanced diet and frequent body checkups.
- The program had established drinking water facilities in the schools, however, a maintenance fund under the school committee is required for better maintenance and upkeep of the facility created. These teaching aids and audio-visual modes of presentation because of the installation of digital screens have changed the relationship between teacher and learner and have the potential to be more than a medium for the transmission of knowledge. But this needs to be backed by new skills, competencies and attitudes among teachers who are going to design and develop materials and support learners using these aids. It is not enough to establish the basic infrastructure, it has to be consistently maintained and upgraded.

5.1 Summary of findings

Natural resource management

With the background that Dhule district is drought prone and highly affected by land degradation, the project intervention aimed at improving the water availability and enhancing soil health in selected villages of drought-stricken Dhule district. Further, agriculture, which is the dominant livelihood activity, is mainly taken up by small and marginal farmers who are mainly dependent on rainfall. Recurrent droughts affected agriculture productivity and farm incomes in the district. Hence, farm management activities that enabled the farmers to diversify their existing cropping systems in turn enhance farm productivity and incomes. The interventions hold promise in equipping the agriculture communities to become resilient to climate change and ecological degradation. However, it was observed that to ensure the sustainability of these interventions, there is a need to provide long-term handholding and support to induce behavioural changes.

Skill training and livelihood enhancement

The rural population in Maharashtra is prominently dependent on agriculture and allied activities for their livelihood. A significant proportion of the rural population is at a subsistence level of income and livelihood. For the sustainable development of the rural community, the state government has made substantial efforts towards the promotion of micro-enterprises. However, despite the efforts, lack of access to the market, and inadequate infrastructure are some of the impediments that the state faces. Under HDFC Bank intervention, SHG groups in the villages were empowered to start their own enterprise. Masala-making units, oil mill establishment, goat rearing, and tailoring/boutique shop were some of the interventions supported by the project. Women were trained in marketing and branding their produce to fetch better prices in the market. Besides this, beneficiaries were supported by the setting up of welding shops, pottery units etc. The project intervention to support marginalized sections of society to set up micro-enterprises through providing skill development training and assistance was much needed.

Health and sanitation

Under the HRDP program, awareness generation sessions and health camps were organized. It was much needed as rural community lacks awareness about the importance of health, frequent medical checkup, the importance of balance and a nutritious diet for women and children. Through the health camps, villagers were encouraged to frequently visit hospitals for early diagnosis of disease. Setting up RO units in the villages has reduced the frequency of diseases caused due to drinking saline water.

Education

HRDP is working on promoting quality education through infrastructure improvements and awareness generation activities. Various learning aids such as books, digital screens along with a projector, learning materials, educational paintings, RO units, and separate washrooms for students were provided under the intervention. This helped in improving the knowledge and learning outcomes of students.

5.2 Recommendations

Based on the observations and analysis of primary and secondary information presented in the report, the study recommends strategies for the program to meet the desired outcomes better.

Natural resource management

Although the interventions led to a broad spectrum of low to high impacts, there is a need to ensure farmers' access to extension services and technical advisors for the sustainability of practices promoted under the HRDP interventions. Further, follow-ups and periodic monitoring post-intervention may be taken up for any mid-course corrections. Establishing post-harvest facilities like storage and agro-processing units at the farm level for pulses and oilseeds would have resulted in a reduction of agricultural loss and higher agriculture incomes for farmers. The project has also led to improved availability of water in the selected villages. However, to ensure sustainability in water availability and accessibility households may also be trained and made aware of their contributions to the repair and maintenance of infrastructures for drinking water management. With an increasing focus on clean energy solutions, the installation of clean energy solutions for water purification could also have been covered in the activities.

Skill training and livelihood enhancement

The qualitative and quantitative study found that the women participating in the program did report greater economic empowerment and an improvement in status/ quality of life and their overall agency. Activities around connecting women entrepreneurs with the markets can ensure better market linkage and better prices for their produce due to the unavailability of markets. Participation from the farmers has been quite challenging across the clusters as travelling for training and exposure visits was limited during the Covid-19 situation. More needs to be done on developing self-sustainable individual and group-level enterprises. While the programme focuses on ensuring that the needs of the community are met, it is very critical to thoroughly analyze the input and standardize its quality to achieve the desired outcomes.

More needs to be done on developing self-sustainable individual and group-level enterprises. The planning and sequencing of skill development of institutions are crucial for the sustenance of the programme outcomes. As regards women's SHGs, the study recommends the creation in future of a three-tiered institution of SHGs, VOs, and federations which are self-sustaining and community-led. The institutional structure created under the program can be made more robust and there are immense opportunities for (a) broadening the leadership base of the institutions, and (b) making savings-based financial resources available for lending at all levels.

Some critical processes can be put in place to ensure that the institution remains vibrant and sustained over time. The efforts include strong capacity-building measures, developing an effective cadre of women to provide handholding support to the groups to expand institutional outreach having a viable revenue model, developing a robust grading system (comprehensive in its approach, incentives, and punitive measures) for the members at the SHG level for all the 33 SHGs that were created, and putting in place some process related innovations that can contribute to the success of the credit and savings program, like innovative management of the cash box and data entry using tablets.

A recommendation on the skill and livelihood theme is to increase the outreach of the program and create value chain-based micro and small enterprises that can create decent jobs for the youth and women in the area of operation. The work on skill development of the farmers mainly through agriculture training to improve their skills and knowledge in areas like field preparation, sowing, planting techniques, more efficient irrigation practices, pesticides, crop rotation, improved storage

and other post-harvest practices could have been scaled up and linked to clear-cut outcomes through a 'training of trainer' model or 'farm field school' model to increase the outreach and effectiveness.

Health and sanitation

As the RO units entail recurring operation costs due to the bursting of pipelines in the villages, options for convergent efforts with the community and respective sarpanch of the village should be looked at. An agreed plan of action for the community may be prepared to ensure sustainability. Parivartaks should be trained in each village to organize frequent health awareness sessions for the community, encouraging them to adopt sanitation and hygiene practices along with regular health checkups.

Education

Appropriate technical knowledge needs to be ensured to operate smart classes, and also to optimize the use of educational aids. To optimize the use of educational aids, the capacity building of teachers needs to be ensured. An asset maintenance fund/ committee needs to be established in the programme-supported schools to ensure the necessary maintenance of supports such as - drinking water posts and smart classes. Proactive convergence with ongoing schemes of the government will ensure efficient use of resources. Post-follow-up intervention to ensure the sustainability of the project is necessary.

6. Annexures

6.1 Sampling methodology

6.1.1 Quantitative sample size calculation

For this study, the formula for the calculation of finite sample size for a one-time cross-sectional survey (Cochran's 1977), has been deemed appropriate. The formula used to estimate the sample size for the quantitative household survey is given below:

$$N = Z_{1-\alpha}^2 \times P(1 - P) \times D_{eff} \div (S_e)^2$$

Where,

N = sample size

P = key characteristic of the population, set at 50%;

$Z_{1-\alpha}$ = standard score corresponding to the confidence interval, set at 95% (1.96 for the two-tailed test);

S_e = margin of error, set at 5%;

D_{eff} = factor for design effect, set at 1 (no design effect)

Thus, the estimated maximum sample size is 400

Quantitative sampling methodology

In this cluster, twelve intervention villages were selected for the study.

Stage 1 – Selection of villages

All the intervention villages were selected as sample villages. Samples from each village were selected by using Probability Proportionate to Size (PPS) sampling method. Care was taken to cover the maximum sample from the villages that have received the maximum number of interventions to get appropriate coverage of all components of the program.

Stage 2 – Selection of beneficiaries

The list of beneficiaries was obtained from the implementing partner - Sanjeevani Institute for Empowerment and Development (SIED). Since beneficiary selection was undertaken independently for each programme, the selection of more than one beneficiary from a single household was probable. Also, there have been instances where a single beneficiary received multiple support for the intervention.

6.1.2 Qualitative sample size calculation

Qualitative tools of In-depth interviews (IDI) and Focus group discussions (FGD) were administered for obtaining information about the remaining themes as well as to enrich the household survey information with a deeper understanding.

Since there was no baseline available for this evaluation, the recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program.

6.2 HRDI Methodology

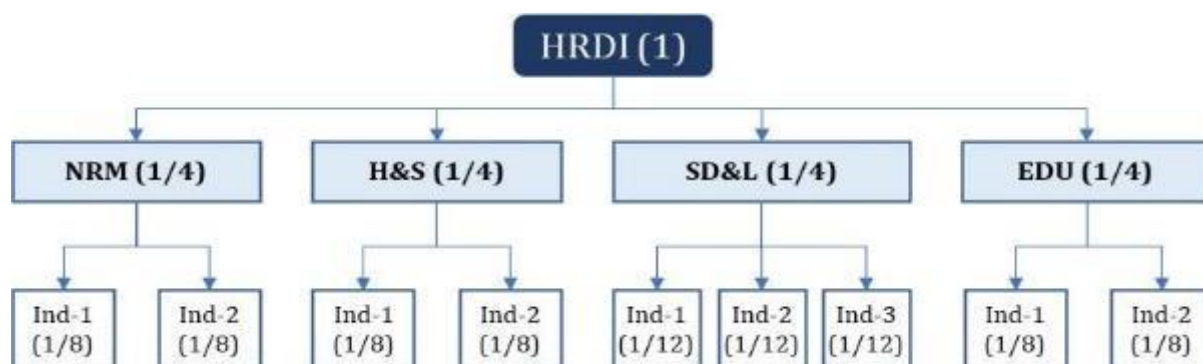
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between 0 and 1. Indicators such as productivity and income which were measured on a continuous scale were converted to discrete variables by setting a cut-off. The 50th percentile of these indicators at baseline was chosen as the cut-off point. **Thus, a change in the indicator could be captured by recording the proportion of beneficiaries above the cut-off at two distinct points in time.**

Indicator Weights

Weights were applied to each of these indicators, in similar lines to the HRDI calculation. Attribution of equal weights to all the domains was done in order to create a standard HRDI for each cluster.

Equal weights were assigned to each of the four domains. Further, the domain weight was equally distributed among the indicators of that domain; thereby ensuring that equal weightage of the domains was maintained overall.

Domain and indicator weights⁴



The example above is indicative. The domains, as well as indicators, were different across all projects, and hence the weights were changed slightly for the purpose of the study, following the principle stated above.

Domain	Indicator	Weight
Project X		
Natural Resource Management	Average net income from farming	$(1/4) \times (1/3) = 0.083$
	Percentage of farmers reporting access to irrigation	$(1/4) \times (1/3) = 0.083$
	The area under irrigation (Ha)	$(1/4) \times (1/3) = 0.083$
Health and Sanitation	The average number of months with access to adequate drinking water	$(1/4) \times (1/3) = 0.083$
	Percentage of households with access to an improved toilet facility	$(1/4) \times (1/3) = 0.083$

⁴ NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

	Percentage of households utilizing soak pits	$(1/4) \times (1/3) = 0.083$
Skill development and livelihoods enhancement	Average monthly income of household from Livestock (INR)	$(1/4) \times (1/3) = 0.083$
	Average monthly income from enterprises (INR)	$(1/4) \times (1/3) = 0.083$
	Average monthly income of SHG women from enterprise (INR)	$(1/4) \times (1/3) = 0.083$
Education	Percentage of students reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, etc.)	$(1/4) \times (1/2) = 0.125$
	Percentage of students reporting increased access to functional learning infrastructure (library, science labs, learning aids, etc.)	$(1/4) \times (1/2) = 0.125$

Once all the indicators were standardized and weighted, a sum of these weighted indicators was utilized to calculate the value of HRDI.

Analysis Plan: HRDI for each cluster/ NGO was calculated at two points in time i.e., before and after HRDP and can be compared cross-sectionally to understand which domains contributed to an increase or decrease in HRDI value. Concurrently, the NGOs can be ranked according to the HRDI score based on their performance across different domains, but care should be taken as the project context varies for each area. Since the value attribution of the indicators is in proportion, the HRDI value numerically ranges between 0 and 1.

Method to calculate HRDI

Step 1: All the indicators were cleaned and adjusted for outliers. Only those beneficiaries were considered for the analysis where data on outcome indicators was available for both pre-and post-intervention.

Step 2: A cut-off value was calculated by taking the 50th percentile for each indicator before HRDP (baseline). For instance, consider the indicator - average annual income of farmers, at baseline, then sorted all the farmers across the seven clusters in ascending order based on their income. The 50th percentile i.e., the median value of the income was taken. This median or 50th percentile was taken as the cut-off (baseline cut-off to be precise).

Step 3: Calculated the proportion of beneficiaries above the set cut-off value at the baseline for each indicator.

Step-4: Calculated the same at the end-line i.e., the proportion of beneficiaries above the baseline cut-off for each indicator.

Step-5: Multiplied each proportion of the indicators with the set indicator weights.

Step-6: Sum all the indicators (i.e., weighted sum) to calculate the HRDI value at baseline and end-line.

Step-7: Calculated the relative change in the HRDI value from baseline to end line.

Step-8: Ranked the clusters based on relative change brought about in the HRDI value i.e., the cluster that brought the maximum change in the HRDI value received the first rank

HRDI indicators for the Dhule project

Domain	Indicators	Baseline	Weight	HRDI	Endline	Weight	HRDI
NRM	The average productivity of crops (3 major crops) grown (quintal per acre)	13	33%	0.09	14	33%	0.08
NRM	The proportion of farmers reporting access to irrigation	89	33%		84	33%	
NRM	The area under irrigation (Ha)	3	33%		3	33%	
H&S	Increase in percentage of people using individual toilets	7	50%	0.13	100	50%	0.23
H&S	Percentage of people disposing of liquid waste in closed pits	100	50%		86	50%	
Skill	The proportion of beneficiaries reporting monthly income from enterprises above the baseline median.	29	33%	0.08	81	33%	0.17
Skill	Percentage of respondents following agricultural practices (application of organic manure, timely application of fertilizers and pesticides, and crop diversification)	20	33%		27	33%	
Skill	the proportion of beneficiaries reporting a monthly income of SHG from enterprise above the baseline median	42	33%		100	33%	
ED	Percentage of teachers reporting access to learning material support (books, learning items)	100	50%	0.17	100	50%	0.17
ED	Percentage of students reported conducting sanitation, hygiene and cleanliness awareness generation session	33	50%		36	50%	

6.3 An overview of project effectiveness and impact tables

An overview of project effectiveness and impact in natural resource management (based on the quantitative findings)

Outputs	Output Indicators		Output Avg.	Impact Level
1. Increased income from agriculture				
1.1 Land/ crop productivity	The proportion of farmers reporting an increase in production of crops that were supported through the use of natural fertilisers under HRDP	86.7%	74.5%	High
	The proportion of farmers reporting a reduction in agriculture cost	34.7%		
	The proportion of farmers reporting an increase in the use of natural fertilizer after the project	88.8%		
	The average increase in productivity from the use of natural fertilizers that were supported under HRDP	87.8%		
1.2 Access to the farm management infrastructure	The proportion of farmers reporting project interventions leading to an increase in income	92.6%	74.5%	High
	The proportion of farmers reporting an increase in income due to the shift to organic farming and other sustainable practices	57.1%		
1.3 Increased adoption of crop diversification	The proportion of farmers diversifying their crops with project support	11.1%	51.4%	Medium
	The proportion of farmers who report income increase due to crop diversification (base = farmers who adopted crop diversification)	91.7%		

An overview of project effectiveness and impact and skill training and livelihood enhancement (based on quantitative study)

Outputs	Output Indicators		Output Avg	Impact Level
1. Improved access to agricultural training and services				
1.1 Access to agriculture training and services	The proportion of farmers who reported project training services are useful/very useful	100%	80%	High
	The proportion of farmers who demonstrate awareness regarding sustainable farming practices (organic farming)	60%		
1.2 Adoption of improved farming practices	The proportion of farmers who adopted sustainable farming practices (organic farming)	40%	72%	High
	The proportion of beneficiaries reporting an increase in productivity due to the adoption of these farming practices	75%		

	The proportion of farmers reporting increased income due to the adoption of these farming practices	100%		
2. Economic empowerment through collectivization (Only for SHG members)				
2.1 Formation/ revival of SHG-based enterprises	The proportion of members who noticed an improvement in personal savings after getting project support for establishing/reviving SHGs	100%	100%	High
	The proportion of members who noticed changes in an increase in income after they received support with establishing/reviving SHG enterprises	100%		
	The proportion of members whose SHGs are currently functioning	100%		
3. Enhanced capacity for regular income generation				
3.1 Enhanced employable skill development	Percentage of respondents who received skill development training in job-oriented programs	67%	63%	Medium
	Percentage of respondents who report improved income through skill development	58%		
3.2 Access to self-employment and	The proportion of beneficiaries who established/ expanded entrepreneurial activities	11%	11%	Low
4. Improved capacity to generate income through livestock management				
4.1 Adoption of scientific management of livestock	The proportion of beneficiaries reporting benefits from livestock management training	61%	52%	Medium
	The proportion of beneficiaries reporting improved livestock (poultry) health	43%		

An overview of project impact and effectiveness in health and sanitation (based on quantitative study)

1. Improved health infrastructure and services				
Outputs	Output Indicators		Output Avg	Impact Level
1.1 Establishment/ enhancement of health infrastructure and services	The proportion of beneficiaries who gained access to health services	64%	82%	High
	The proportion of beneficiaries who consulted medical references from camps	100%		
2. Improved awareness and health-seeking behaviour				
2.1 Awareness regarding health and sanitation practices	The proportion of beneficiaries who noted improvement in dietary habits	88%	87%	High
	Improved awareness regarding cleanliness and sanitation practices especially regarding not doing open defecation	867%		

TAn overview of project effectiveness and impact on education (based on quantitative study)

Outcome1 : Improved capacity of educational institutions to provide services

1.1 Access to improved physical infrastructure and improved teacher's capacities	The proportion of schools that gained access to clean and functioning sanitation units/drinking water posts at educational institutions	87.2%	93.6%	High
	The proportion of teachers reporting improved capacity to adopt innovative teaching methods (Base= teachers who received training)	100%		
1.2 Improved willingness to engage in school activities	Teachers reporting improvements in attendance due to improved infrastructure	100%	89%	High
	The proportion of teachers reporting an increase in enrolment post-infrastructure development	67%		
	The proportion of students who report using the science lab regularly at school	100%		
Outcome 2: Improved learning outcomes				
2.1 Improved exam performance and subject confidence among students	The proportion of students who gained confidence in preparing for exams	87%	66.7%	Medium
	The proportion of students who report improvements in access to reference material	65%		
	The proportion of students reporting an increase in confidence in various subjects (lessons are easy to understand, more interesting, etc.)	48%		
Outcome 3: Improved management of the school				
3.1 Improved coordination among students, parents, and teachers	The proportion of teachers who reported that there is the active participation of community members in school activities	100%	100%	High
