AXIS BANK FOUNDATION

Baseline Study of the Rural Livelihood Project with CInI, Odisha

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Acknowledgements

This report is an outcome of the Baseline Assessment Study undertaken by the CII Centre of Excellence for Sustainable Development for Axis Bank Foundation (ABF) in 2023. The study covers 300 villages across four blocks in two districts of Odisha namely Keonjhar and Mayurbhanj.

We wish to express our sincere gratitude and appreciation to the corporate office program research team for initiating the study and Collectives for Integrated Livelihood Initiatives team for consistent support in providing relevant data & information and planning the site visit.

The study would not have been possible and complete without the active participation of the beneficiaries and other key stakeholders who had taken time to participate in one-on-one interactions and group discussions to share their experiences. Their inputs have enabled us to understand the challenges, opportunities, and processes for engaging them in different initiatives. They have also brought to light the current scenario, which has enriched the study immensely.

List of Abbreviations

ABF	Axis Bank Foundation
AC	Air Conditioner
ANM	Auxiliary Nurse and Midwife
APY	Atal Pension Yojana
ASHA	Accredited Social Health Activist
ATM	Automatic Teller Machine
AWC	Anganwadi Centre
CESD	Centre of Excellence for Sustainable Development
CHC	Community Health Centre
CII	Confederation of Indian Industry
DBT	Direct Benefit Transfer
DDUGKY	Deen Dayal Upadhyay Grameen Kaushalya Yojana
DSR	Direct Seeded Rice
FGD	Focus Group Discussion
FPO	Farmer Producer Organisation
HHs	Households
ICDS	Integrated Child Development Services
IEC	Information Education and Communication
IFA	Iron and Folic Acid
IGAs	Income Generation Activities
IMR	Infant Mortality Rate
ITIs	Industrial Training Institutes
JSSY	Janani Shishu Suraksha Yojana
JSY	Janani Suraksha Yojana

KALIA	Krushak Assistance for Livelihood and Income Augmentation
KVK	Krishi Vigyan Kendra
LPG	Liquified Petroleum Gas
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MMR	Maternal Mortality Rate
MUDRA	Micro Units Development and Refinance Agency
OBC	Other Backward Classes
OLM	Odisha Livelihood Mission
PDS	Public Distribution System
PHC	Primary Healthcare Centre
PMAY	Pradhan Mantri Awas Yojana
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PRI	Panchayati Raj Institution
SBA	Swachh Bharat Abhiyaan
SC	Scheduled Castes
SHC	Soil Health Card
SHGs	Self Help Groups
SRI	System of Rice Intensification
ST	Scheduled Tribes
VHND	Village Health and Nutrition Day

Contents

Executive Summary

This report is an outcome of the Baseline Study conducted by CII Centre of Excellence for Sustainable Development (CESD) for Axis Bank Foundation (ABF) in 2023 in the 4 blocks of Keonjhar and Mayurbhanj districts of Odisha.

Since 2006, ABF has been implementing education, skill development, sustainable livelihood programmes, as well as financial security-like initiatives to promote inclusive and equitable development of communities. The projects are being implemented by Collectives for Integrated Livelihood Initiatives (CInI) which is the nodal agency for the Central India Initiative of the Tata Trust, set up in 2007 as a society to transform the lives of tribal households in central India. In 2015, CInI initiated its flagship aspirational program, Mission 2020, Lakhpati Kisan, Smart villages with one lakh tribal smallholders.[1]

The project aims to enhance the income and build capacities of farmers on farm & non-farm livelihoods, advanced irrigation techniques, and entrepreneurship models. The project aims to reach out to 30,000 households across 300 villages in blocks of Harichandanpur and Jhumpura in Keonjhar District, and in Kusumi and Sukruli blocks of Mayurbhanj District.

The organisation intended to conduct a Baseline Study of the Lakhpati Kisan Project in Odisha's Keonjhar and Mayurbhanj districts. The baseline study findings will help the company to understand the socio-economic profile of the target beneficiaries and set the benchmark against which future progress can be assessed. The study outcomes will build a data repository which ABF can utilise to monitor and evaluate the project's progress and effectiveness during the implementation and post-project completion phase. The findings and recommendations of this study are designed to provide essential directions for amendments in project strategy, execution, and the way forward.

A total sample of 460 households was undertaken for the baseline study in 4 blocks of Keonjhar and Mayurbhanj districts. The research team has taken a proportionate representative sample from both districts of Odisha. It has a confidence level of **95%** with a margin of error within **±5%** of the surveyed value. 53 non-beneficiary households from surrounding villages have also been covered as the control group population to compare the progress of project villages in subsequent years. Household survey, focus group discussion and in-depth interview methods were used to gather quantitative and qualitative data from beneficiaries and non-beneficiaries.

1. RFP document provided by ABF

Keonjhar and Mayurbhanj districts have abundant natural resources and favourable agro-climatic conditions suitable for various crops. There is a potential for increasing agricultural productivity through improved farming practices and diversification of crops. The districts have a significant forest cover. These forests not only contribute to the biodiversity of the region but also provide opportunities for timber production and non-timber forest products.

Keonjhar is known for its mineral wealth and is one of the major mining districts in Odisha. The presence of iron ore, manganese, and other minerals contributes to industrial development and generates employment opportunities. Although irrigation facilities are limited, both districts have rivers, canals, and water bodies that can be harnessed for irrigation purposes. With proper infrastructure development and water management, there is potential for expanding irrigation coverage and enhancing agricultural productivity.

Capitalising on these strengths can help foster sustainable development, promote livelihood opportunities, and improve the overall well-being of communities in Keonjhar and Mayurbhanj districts. CInI has constructed irrigation infrastructure and is also promoting the use of dug wells, farm ponds, sprinklers, drip irrigation and river lift irrigation with the support of Axis Bank Foundation to enhance crop productivity and farm income.

Key Findings

Social Category, PDS and Education

- Men comprised **60%** of the project villages and women formed **40%**. In the control group, **51%** were men and **49%** women.
- Scheduled Tribes represented **90%** of the study population in project villages and **89%** in the control group.
- **82%** of HHs in project villages and **75%** in the control group mentioned having access to education.
- **90%** of HHs in project villages and **89%** in the control group were under the BPL category.
- PDS rations are availed regularly by **78%** of HHs in project villages and **89%** in the control group.
- In the project villages, essential facilities such as sub-centers, anganwadi centers, and primary schools are situated within a 100-meter radius, ensuring easy accessibility for the local residents. However, access to more advanced services like middle and senior secondary schools, primary health centers (PHCs), and veterinary hospitals requires covering a distance of over 3 kms. It is to be noted that level of engagement within the gram panchayats and the local governing bodies was observed to be limited in the majority of villages as the project is in its initial phase.

Agriculture, Household Income and Occupation

- The average landholding size of project households stands at 2 acres, with average irrigated land at 1 acre per HH and non-irrigated land at 1 acre per HH. The non-irrigated land is dependent on rainfall for any type of cultivation activity. However, irrigated land is available only for 6 months during a year. **82%** of HHs in the project villages and **75%** in the control group mentioned having access to education.
- **68%** of HHs in project villages and **72%** in the control group belong to the marginal category of farmers.
- **97%** of HHs in project villages and **96%** in the control group have not undertaken soil testing.
- **99%** of HHs in project villages and **96%** in the control group do not have soil health cards.
- **62%** of HHs in project villages and **45%** in the control group are willing to adopt organic farming.
- Agriculture remains the primary occupation of HHs in both project villages and the control group.
- **56%** of HHs reported having an annual net disposable income[2] of Rs 0 – 12,000 and **29%** HHs had Rs 12,001 - 36,000.
- The average annual net disposable income is measured as Rs 23,000 in the surveyed villages. It is calculated as Rs 23,104 for HHs in the project villages and Rs 22,594 per annum for the control group.
- Lack of market linkage is a prominent issue in the project villages. The establishment of market linkages presents a range of challenges such as limited infrastructure and connectivity, hindering efficient transportation. Information gaps about market trends and prices leave villagers vulnerable to intermediaries. This challenge has negative repercussions on farmers' income and contributes to the wastage of food resources.

Livestock, Irrigation Amenities and Drinking Water

- **93%** of HHs in project villages and **91%** in the control group are not aware of animal insurance.
- **96%** of HHs in project villages and **92%** in the control group are unaware of animal loans.
- **97%** of HHs in project villages and **98%** in the control group do not have awareness on artificial insemination.
- **77%** of HHs in project villages and **79%** in the control group are dependent on rainwater for irrigation.

2. Net Disposable Income = Gross Income – Cost

- Handpump is the most used source of drinking water for both project villages and the control group.

- **89%** of HHs in project villages and **91%** in the control group do not undertake water conservation. **86%** in project villages and **94%** in the control group do not have facilities for rainwater harvesting.

- **93%** of HHs in project villages and **91%** in the control group do not purify water before intake.

Housing, Sanitation and Waste Disposal Mechanism

- **56%** of HHs in project villages and **55%** in the control group have kuccha houses. **76%** of HHs in project villages and **75%** in the control group have not availed PMAY.

- **13%** of HHs in project villages and **11%** in the control group have pucca houses.

- **70%** of HHs in project villages and **77%** in the control group do not have access to drainage.

- **51%** of HHs in project villages and **53%** in the control group mentioned having toilets. However, family members defecate in the open as most of these toilets require repair and renovation (**97%** of the population go for open defecation).

- In both project villages and the control group, HHs get electricity for 6-10 hrs on an average.

- **93%** of HHs in project villages and **100%** in the control group do not segregate waste.

Financial Literacy, Assets and Renewable Energy

- **98%** of HHs in project villages and **91%** in the control group have bank accounts. Despite having bank accounts only **26%** of HHs in both the groups use ATMs for cash withdrawal.

- **71%** of HHs in project villages and **81%** in the control group do not have access to credit linkages. In villages, credit linkages encounter several obstacles that hinder access to financial resources. These challenges include low financial literacy, lack of collateral, reliance on informal borrowing with high interest rates, and the seasonal nature of income. Additionally, complex application processes, inadequate credit history, and gender disparities further complicate the situation.

- **68%** of HHs in project villages and **74%** in the control group do not have awareness on financial products and services such as fixed deposits, recurring deposits, and mutual funds etc.

- Awareness regarding UPIs stands at **11%** in HHs of project villages and at **6%** for the control group HHs. **90%** of HHs in project villages and **96%** in the control group do not use UPI for transaction purposes.

- Cycles are the highest ranked asset amongst both the project villages and control group respectively followed by mobile phones or smartphones. However not every HH has access to internet or related services.

- Wood is the most used fuel by HHs in both project villages and the control group, LPG ranks second. However, HHs do not refill their cylinders due to the high cost of refilling.

- **97%** of HHs in project villages and **100%** in the control group do not have access to renewable energy sources.

Recommendations

A multi-dimensional approach is needed to develop rural areas of Odisha's Keonjhar and Mayurbhanj districts. Concentrated efforts in a few villages, adequate resource allocation, people's participation and government partnerships can enhance impact of the project in the long-term. Following are recommendations for the project:

Agriculture

- The organisation may promote climate resilient crops for cultivation due to its lower water requirement, and it fetches better price than paddy.

- Vegetables and fruit cultivation may be promoted by the organisation as it fetches a fair price margin for farmers. In addition, training on Goatry, Piggery, and Duckery (rearing, feed, shelter, and funding) will help increase the households' overall farm-based income.

- Households are shifting from paddy to horticulture and livestock to increase their farm income. Improvement in agricultural practices such as (SRI, DSR), FPO, collective farming and cold storage/paddy processing units may be promoted by the organisation in the project villages to avoid distressed paddy sales and increase the crop yield to get a good margin for farmers.

- Strengthening Farmers' Producer Organisations and taking care of both forward and backward linkages with special focus on communities that are historically marginalised.

- Providing training to small farmers on systemic production techniques and marketing of products.

Livestock

- The organisation can support households by increasing market access and value chain integration, such as establishing market infrastructure, strengthening market linkages and training and capacity building for livestock management.

- The organisation may provide quality veterinary healthcare services to households and organise training sessions with the Animal Husbandry Department to provide local women with technical knowledge on feeding, breeding, and livestock management.

- The organisation may create awareness regarding vaccination and disease control to prevent animal mortality.

- **95%** of households need to be made aware of animal loans and insurance. The organisation may create awareness regarding animal loans and insurance through campaigns and village level meetings. This will help in risk management, financial protection, and provide access to capital for livestock farmers.

- Establish convergence with Krushi Vigyan Kendras, Horticulture Department, etc.

Education

- Create awareness amongst parents on the importance of attending Parent Teacher Meetings and School Management Meetings regularly.

- Develop campaigns to spread awareness on perils of early marriage in the community.

- The organisation may conduct awareness sessions on women's literacy and motivate parents to educate their daughters.

- The organisation may provide skill training to youth on electrical work, masonry, welding, tailoring, computer literacy, bamboo craft etc.

- Awareness and training of women and men on financial literacy and digital financial literacy.

Water Resources

- There is a shortage of drinking water and irrigation channels in project villages. The organisation may promote irrigation infrastructure, including canals, tanks, and irrigation channels to increase agricultural productivity.

- Awareness regarding water conservation techniques such as rainwater harvesting, watershed management, and promoting efficient irrigation practices like drip irrigation can help in conserving water resources and improving water availability in project villages.

- The organisation may promote adopting crop patterns and agricultural practices that are suitable for water-stressed conditions.

- The organisation may promote groundwater recharge methods such as constructing check dams, percolation tanks, and farm ponds to recharge aquifers and increase groundwater availability.

Healthcare

- **97%** of the households practice open defecation in project villages despite having toilet units at home as they are defunct, and only **3%** have functional toilets. Therefore, the organisation may construct individual household toilets for beneficiaries through government contributions under the Swachh Bharat Scheme to address the existing challenges.

- The organisation may promote behaviour change among community members to regularly use toilets and take ownership of operation and maintenance if they become non-functional.

- The organisation may provide a Mobile Health Van facility to improve healthcare services and make it accessible in rural areas.

- Developing and distributing Information, Education and Communication materials on how to prevent diseases, promote institutional deliveries and create awareness on the importance of breastfeeding in the community, in local languages.

Women Empowerment

- **80%** of women are illiterate in project villages. Therefore, the organisation may provide functional literacy to these women to build their capacity and enhance SHGs' performance and quality of life.

- The organisation may promote income generation activities through SHGs to create value added products from jack fruit, tamarind, cashew and chilly cultivation as well as fish farming (pisciculture). They can also be engaged in spice grinding, vermicomposting, soap making, sal plates making and tailoring activities etc.

Infrastructure Development

- Internet connection is required, to access information about weather forecasts, agricultural subsidies, government schemes and marketing opportunities.

Crop and Animal Loans

- The organisation may raise awareness about agricultural loans as it can provide necessary financial support to farmers to meet agricultural needs such as purchase seeds, fertilisers, pesticides, and other inputs required for cultivation.

- The organisation may help farmers access crop loans as it will enable them to invest in modern agricultural practices and improved farming techniques. This will result in increased crop productivity and farm income.

- The organisation may create awareness regarding animal loans to support individuals in acquiring or expanding their livestock. This can provide access to adequate training, veterinary services and market linkage support to ensure sustainable livestock-related activities.

Local Governance and Convergence with Government Schemes

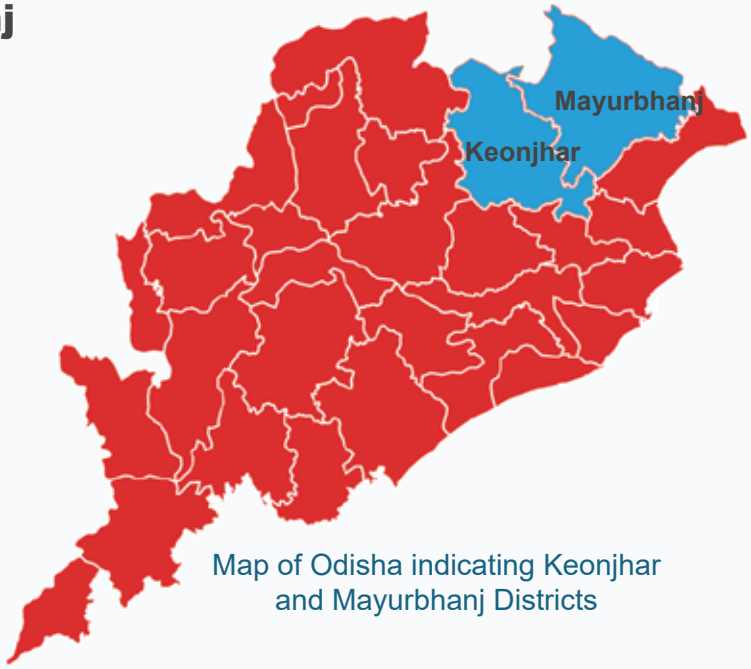
- The organisation may build the capacity of Panchayati Raj Institutions (PRIs) and engage them in project planning and execution since inception to bring credibility and enhance the overall development process.

- The organisation may push for convergence with various government departments such as Agriculture, Livestock Development, Rural Livelihood Mission, Water Resources etc.

Introduction

Keonjhar and Mayurbhanj

Keonjhar and Mayurbhanj districts contribute to the socio-economic development of the state. It includes abundant natural resources such as minerals, forests, and fertile agricultural land. Fertile soil and adequate rainfall support the cultivation of paddy, maize, millets, oilseeds, vegetables, and fruits.[3] There is a potential for increasing agricultural productivity through improved farming practices and diversification of crops. Forest resources not only contribute to the biodiversity of the region but also provide opportunities for timber production, non-timber forest products, and ecotourism.



Map of Odisha indicating Keonjhar and Mayurbhanj Districts

Keonjhar and Mayurbhanj have a rich cultural heritage with tribal communities residing in the region. Vibrant tribal art and crafts, such as Dokra metal craft and Patachitra paintings, present opportunities for cultural tourism and economic development. Keonjhar is one of the major mining districts in Odisha. The presence of iron ore, manganese, and other minerals contributes to industrial development and generates employment opportunities.[4] Both districts are well-connected by road and have access to nearby towns and cities. This connectivity facilitates transportation of agricultural produce, market access, and trade opportunities.

Although irrigation facilities are limited, both districts have rivers, canals, and water bodies that can be harnessed for irrigation purposes. With proper infrastructure development and water management, there is potential for expanding irrigation coverage and enhancing agricultural productivity. The districts have a limited skilled labour force, including farmers, artisans, and workers in various sectors. Skill development initiatives and training programmes can further enhance their capabilities and contribute to economic growth. The presence of local government bodies and community-based organisations such as Self-Help Groups (SHGs) provides a platform for participatory development, empowering local communities to make decisions and implement initiatives that align with their needs.

One of the common challenges Keonjhar and Mayurbhanj districts face is with respect to the monsoon rains for agriculture. The availability of irrigation facilities is limited, leading to dependence on rainfall. Erratic rainfall patterns and drought conditions can significantly affect agricultural productivity. The practice of land fragmentation, where land holdings are divided into smaller plots over generations, is prevalent in these districts. This fragmentation makes it challenging to implement modern agricultural practices, mechanisation, and efficient water management.

3. https://mayurbhanj.nic.in/agriculture/
4. https://kendujhar.nic.in/economy/

Agricultural productivity in these districts is relatively low due to several factors such as outdated farming techniques, inadequate access to modern technology, limited use of fertilisers and pesticides, and lack of awareness about improved farming practices. Both districts face the problem of soil erosion and degradation due to deforestation, improper land management practices, and unsustainable farming methods. This leads to reduced soil fertility and decreases agricultural yields. There is lack of access to credit and markets. Farmers in these districts often face difficulties in accessing credit and markets. Limited financial resources and inadequate market linkages restrict their ability to invest in modern agricultural inputs, technologies, and machinery, hampering their overall agricultural development. The predominance of rainfed agriculture in these districts makes them vulnerable to weather-related risks. Inconsistent rainfall patterns, droughts, and floods adversely affect crop production, leading to income instability for farmers.

There is limited agricultural diversification, hence, there is a need for diversification of crops and promoting alternative agricultural practices like horticulture, sericulture, pisciculture, and agroforestry. Encouraging diversification can enhance income generation and reduce the risk associated with mono-cropping. Lack of infrastructure is critical, inadequate rural infrastructure, including roads, storage facilities, cold chains, and processing units hinders efficient transportation, storage, and marketing of agricultural produce. This results in post-harvest losses and limited value addition to farm products.

Addressing these challenges requires an integrated approach involving investments in irrigation infrastructure, promoting sustainable farming practices, providing access to credit and markets, improving rural infrastructure, and enhancing the resilience of farmers through training and capacity-building programs. Collaboration between the government, agricultural departments, research institutions, and local communities is crucial to overcoming these challenges and promoting agricultural development in Keonjhar and Mayurbhanj districts.

Kitchen Garden

Key Findings of the Baseline Study

The baseline study was conducted in 8 villages of Keonjhar and Mayurbhanj districts of Odisha. Social, economic, and environmental indicators were covered to understand the present socio-economic situation in project villages. The total project beneficiaries are 30,000 households[5] in 2 blocks of Mayurbhanj and 2 blocks of Keonjhar. CESD undertook a total sample of 460 households for the baseline study. The proportionate sample represents both districts of Odisha. CESD undertook the detailed sampling after understanding the proximity of project villages, their availability for the study, and the engagement of primary and secondary stakeholders in the project. CESD used a sample of 407 to collect data from the target population through door-to-door surveys, focus group discussions, observation checklists and in-depth interview instruments. 53 non-beneficiary households from the surrounding villages were covered as a part of the control group population, to compare the progress of the project villages in subsequent years.

A total of 226 households in the Keonjhar district and 234 households in the Mayurbhanj district were part of the baseline study. This sample further cascaded proportionately into 2 Keonjhar blocks (Harichandanpur and Jhumpura) and 2 Mayurbhanj district blocks (Sukurli, Kusumi). The baseline study covered 25 non-beneficiary households in Keonjhar and 28 non-beneficiary households in Mayurbhanj districts. The project was initiated in January 2023 in both districts. There was no major difference seen in study indicators among beneficiaries and non-beneficiaries in 4 months (during the site visit).

Findings of the qualitative indicators are clubbed with the quantitative ones to understand the overall socio-economic conditions in the surveyed villages. This is mentioned in the sections below.

The project villages are referred to as treatment groups and non-beneficiaries as control groups in the graphs throughout the baseline report. The study outcomes are mentioned below.

FGD with women members Kankana village, Jhumpura block, Keonjhar

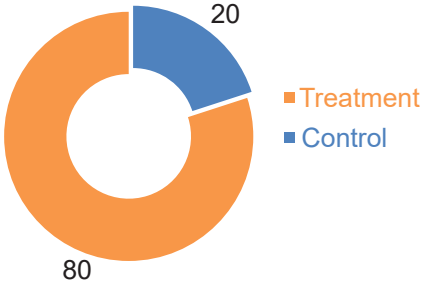
5. Data provided by ABF

Socio-Demographic Profile

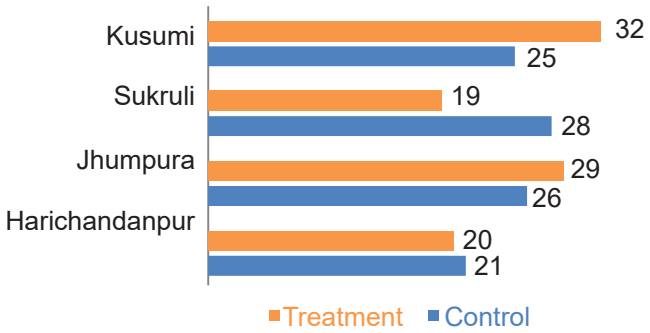
Project Villages & Control Group and Study Coverage

The baseline study was conducted with both project villages and the control groups. Project villages formed **80%** of the total population under the study, while the control group formed **20%**. The research team covered a total of 8 villages in 4 blocks of Odisha (Harichandanpur, Jhumpura, Kusumi and Sukruli) in the baseline study. The sample has been collected based on proportionate beneficiary representation.

Treatment & Control Group (%)



Block wise Sample Coverage (%)

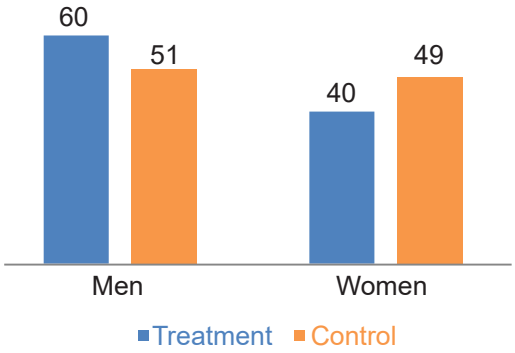


District	Block	Village
Keonjhar	Harichandanpur, Jhumpura	Nardengipenth, Hatikucha, Rengalbeda, Kankana
Mayurbhanj	Sukruli, Kusumi	Kiti Sahi, Deuli, Solakud, Majhigaon

Kusumi block has the highest coverage of the sample followed by Jhumpura, Harichandanpur and Sukruli. Sukruli block has the highest coverage of the control group sample followed by Jhumpura, Kusumi and Harichandanpur. Out of the total population, **52%** of the sample was collected from Mayurbhanj, and **48%** from Keonjhar district.

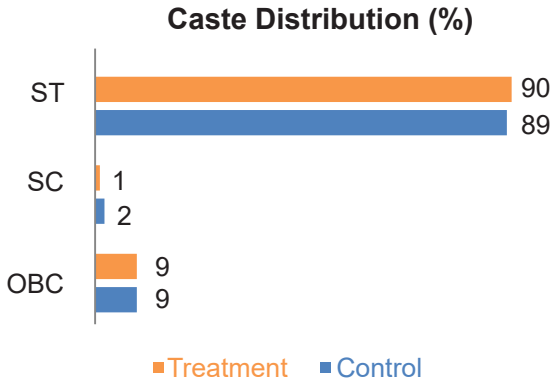
Gender

Gender Distribution (%)



In terms of gender distribution, **60%** of the men and **40%** of the women in the project villages participated in the survey, while **51%** of the men and **49%** of the women took part in the control group. The study witnessed a higher participation of men as women were engaged in managing their household activities along with care work which involves taking care of household chores, care of families including children and elderly, cattle rearing and irrigation work.

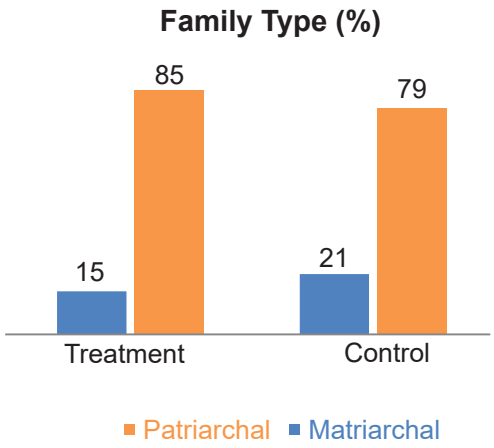
Caste



Scheduled Tribes (STs) formed a majority of the sample in both project villages and the control group. STs represented **90%** of the HHs in project villages while **9%** were Other Backward Classes (OBCs) and **1%** Scheduled Caste (SC). In the control group, **89%** of HHs reported being STs **9%** were OBCs and **2%** were SC. The region under study is dominated by ST population and specifically Santhals, Ho tribes inhabit the area. However, none of the HHs belong to the general category in both project villages and control groups.

Family Type

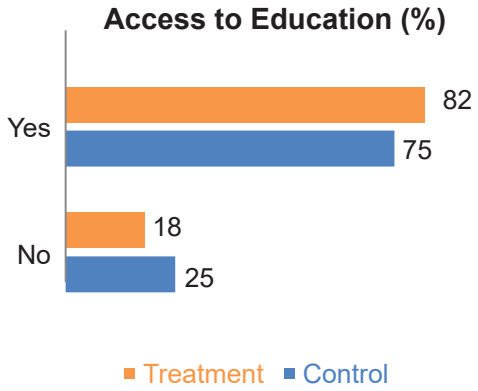
85% of HHs in project villages and **79%** in the control group reported being patriarchal. **15%** of HHs in project villages and **21%** in the control group, despite having a male member in the family, were matriarchal. Women in these families took care of all the family members along with their micro-enterprises or farming and were key decision makers. Additionally, the average family size of households is 5 and none of them reported having any family member with a disability.



Education

Access to Education

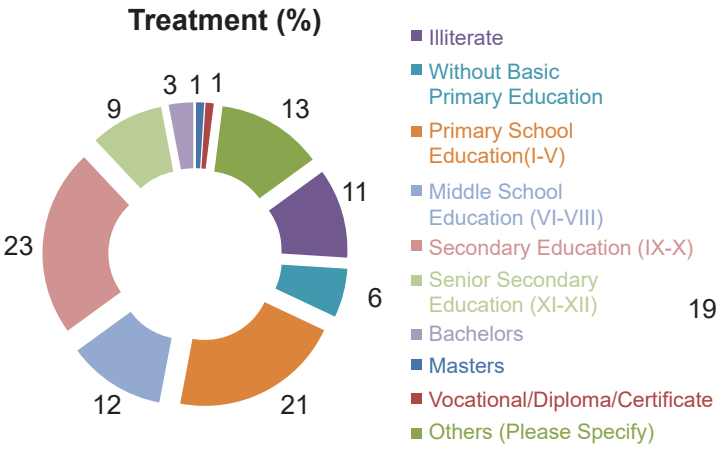
In the project villages, **82%** of households reported having access to education, while **18%** stated that they lacked access to education. Among households in the control group, **75%** mentioned they had access to education, while **25%** indicated they did not. Some HHs mentioned that schools, especially primary schools were far from their house, making it difficult for them to send their children. Further, the average scholarship amount received by children was Rs 2,000 per year. The teachers in Mayurbhanj reported schools as not having adequate infrastructure such as classrooms, boundary walls and drinking water facilities as well as paucity of teachers.

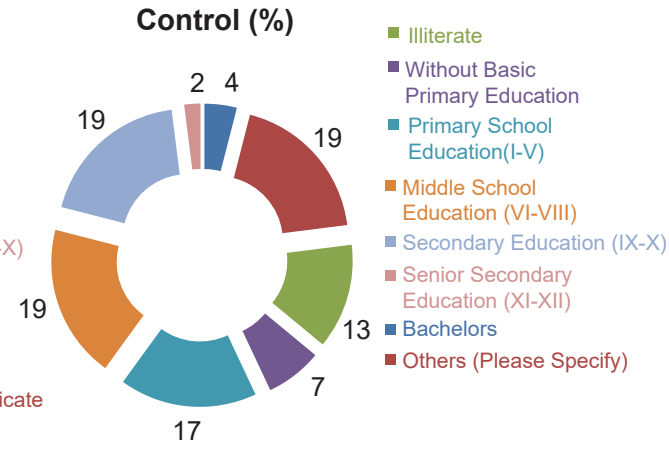


Highest Educational Qualification

HHs from both the groups were asked about their highest educational qualifications- in the project villages, **23%** of HHs had completed their secondary education (IX-X), **21%** had done primary education (I-V), **12%** had completed middle school education (VI-VIII), **11%** were illiterate, **9%** had completed their senior secondary education (XI-XII), **6%** were without basic primary education and only knew how to put their signature and write their names. **6%** had completed their bachelor's degree while **1%** had done vocational training/diploma. Less than **1%** had a master's degree and **13%** did not respond.

For HHs in the control group, **19%** had completed their middle school and senior secondary education. **17%** had attended primary school, **13%** were illiterate, **8%** did not have basic primary education, **4%** had a bachelor's degree and **2%** had completed their senior secondary education. Only **19%** did not respond.

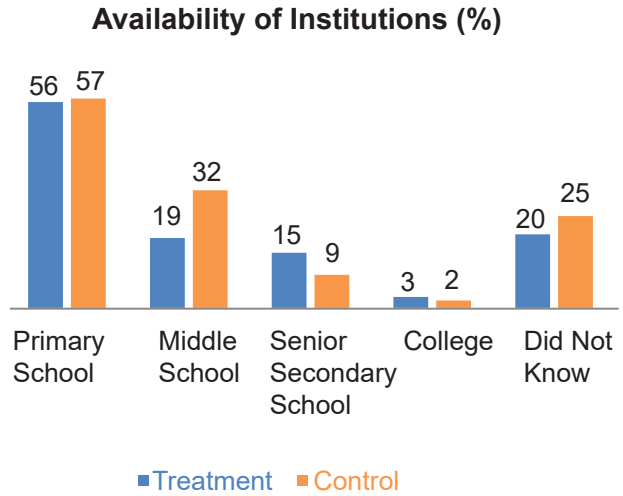




Availability of Educational Institutions

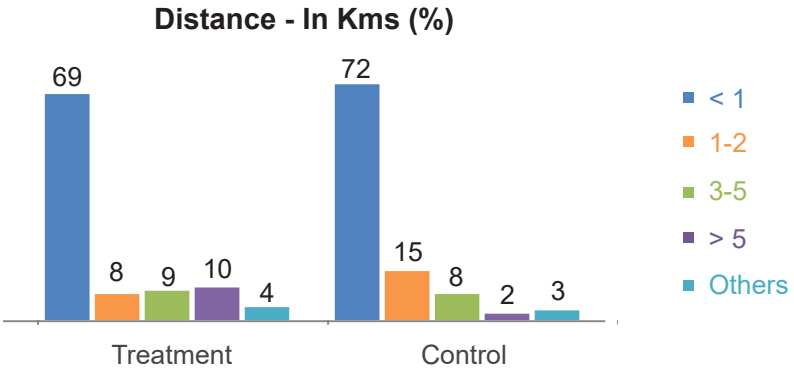
In the project villages, **56%** of HHs mentioned access to primary schools, **19%** had access to middle schools, **15%** had access to senior secondary schools, **3%** had access to colleges and **20%** were not aware of educational institutions near them.

In the control group, **57%** of HHs had access to primary schools near by, **32%** had access to middle schools, **9%** to senior secondary schools, **2%** to college and **25%** did not respond.



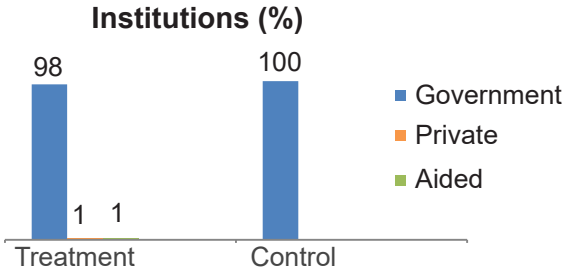
Distance of Educational Institutions

The HHs in Kiti Sahi and Deuli village, Sukruli block and in the 2 blocks of Keonjhar mentioned access to primary schools in the panchayat village. Colleges are located in Sukruli and Harichandanpur, while the high school is at an average distance of 2-3 kms. Solakud and Majhgaon villages in Kusumi block had primary schools while middle and high school were at a distance of 3 kms. **69%** of HHs from project villages and **72%** from the control group said educational institutes were at a distance of less than 1 km, **8%** from project villages and **15** % from the control group mentioned a distance between 1-2 kms. **9%** of the HHs from project villages and **8%** from the control group mentioned 3-5 kms, while **10%** from project villages and **2%** from the control group mentioned more than 5 kms.



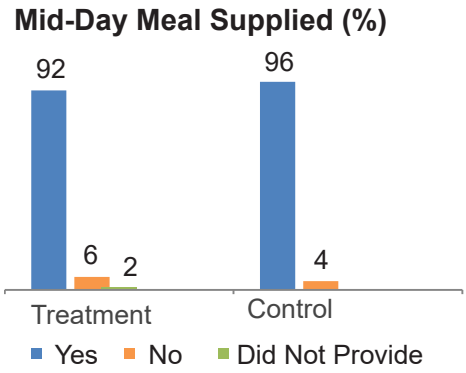
Types of Educational Institutions

98% of HHs from project villages and **100%** from the control group mentioned receiving education from government schools as they could not afford private schools. **1%** said that their wards go to aided schools and **1%** attended private school.



Mid-Day Meal

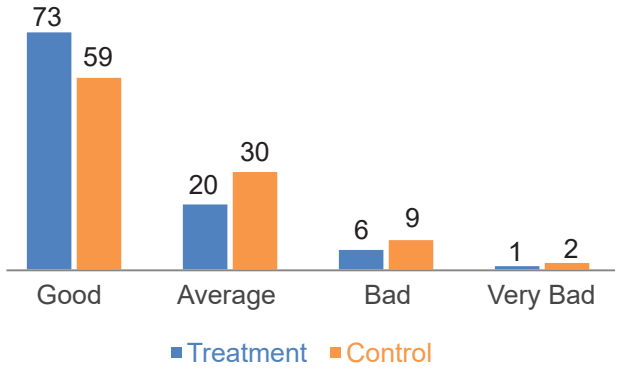
The HHs from both the groups were asked if Mid-Day Meals were provided in the schools. Within the project villages, **92%** of households reported that meals were supplied, while **6%** mentioned that their children did not receive Mid-Day Meals, and **2%** did not provide a response. In the control group, **96%** stated that meals were provided, while **4%** indicated that meals were not provided.



Quality of Education

73% of HHs in project villages and **59%** from the control group found the quality of education to be 'Good', **20%** of HHs in project villages and **30%** in the control group said 'Average', **6%** of HHs in project villages and **9%** in the control group said 'Bad' and **1%** of HHs in project villages and **2%** of the control group found the quality of education as 'Very Bad'. Both the districts struggle with infrastructural and resource deficit. The Additional Education Officers (AEOs) of Kusumi block highlighted some key challenges in the areas in terms of providing quality education, such as insufficient teachers, lack of proper school infrastructure, long distances of middle and senior secondary school from villages and most importantly the non-availability of teachers who can speak fluently the local language of the region.

Quality of Education (%)



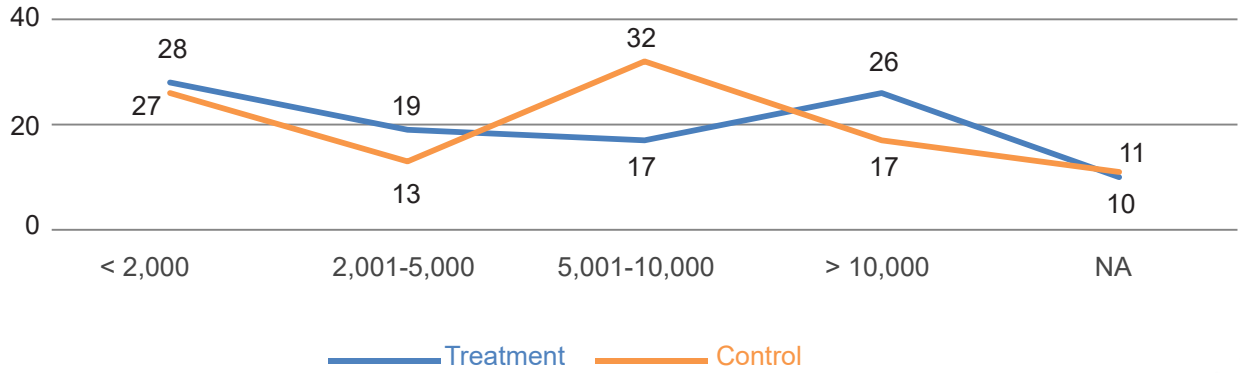
Annual Expenditure on Education

HHs in both project villages and the control group were asked about the annual expenditure on education, which includes expenses on school stationery, school and tuition fee, transportation etc. In the project villages, **26%** of HHs spend more than Rs 10,000 annually, **17%** spend between Rs 5,001-10,000, **19%** spend between Rs 2,001- 5,000, **28%** spend <Rs 2,000 annually. **10%** of the HHs said not applicable as they do not have school going children.

Primary School

In the control group, **17%** of HHs spend more than Rs 10,000, **32%** spend between Rs 5,001-10,000, **13%** spend Rs 2,001-5,000, **27%** spend <Rs 2,000, and **11%** did not respond.

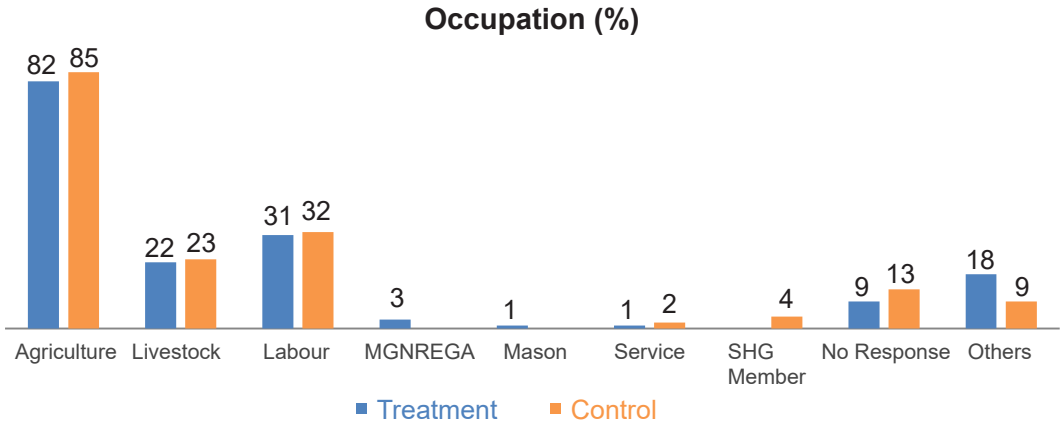
Annual Expenditure on Education - In Rs (%)



Livelihood

Agriculture is the mainstay of the population. It was observed that most of the HHs were engaged in agriculture, horticulture, and rearing of livestock.

The baseline study tried to understand the occupation of HHs from project villages and the control group. Out of the total HHs surveyed, **82%** of project villages and **85%** of the control group mentioned agriculture as their mainstay occupation. Most of the population residing in the region are engaged in agriculture and it is mostly rain-fed agriculture that is practiced. Lack of irrigation facilities makes it difficult for the households to practice farming in seasons other than monsoons. Further, in the project villages, labour work stands at **31%** and livestock at **22%**. **3%** of HHs in the project villages are involved in MGNREGA and **1%** each in masonry work and service respectively. In the control group, apart from agriculture, **32%** of the HHs are engaged in labour, **23%** in livestock and **4%** are SHG members. Some beneficiaries and non-beneficiaries mentioned pension, cycle mechanic, kirana store, auto driver and garage like occupation which is marked as “Others” in the graph.



Occupation	Project HHs	Project HHs (%)	Control Group HHs	Control Group HHs (%)
Agriculture	170	82	45	85
Livestock	47	22	12	23
Labour	64	31	17	32
MGNREGA	6	3	0	0
Mason	2	1	0	0
Service	1	1	1	2
SHG Member	0	0	2	4
No Response	18	9	7	13
Others	38	18*	5	9*

*Please note this is a multiple selection question, the data will not add up to 100% (N=207 (project villages) and N=53 (control group)). The table has combined the data for both primary and secondary occupation. Agriculture remains the major occupation, while other sources of livelihood are practiced alongside agriculture.

A few households are engaged in MGNREGA as their secondary occupation. However, beneficiaries mentioned that they hardly get any MGNREGA work and if they do it is only for 15-20 days in a year with a daily wage rate of Rs 222 per day[6], although most people have job cards available with them. Apart from working as labourers in MGNREGA, HHs from Majhigaon village in Kusumi block mentioned, that they also work as hired labour on farms to earn their daily wages. Men earn Rs 250 per day and women Rs 200.

Annual Net Disposable Income

- The per capita income of Odisha that was Rs 48,499 in 2011-12 has gone up to Rs 1,27,383 in 2021-22 (AE).[7] The state's per capita income has risen to Rs 1,50,676 in 2022- 23 (AE). This is attributed to rapid economic growth, capital investment, employment generation and stabilisation in population.

- Odisha's agricultural income was Rs 5,112 per month as per SAS – 2018-19[8] whereas those having less than 0.01 hectares earned only Rs 1,062 per month. Their monthly pension/remittance income was Rs 4,299.

- The state government has mandated the state minimum wages for unskilled labourers at Rs 345 per day[9], which amounts to Rs 62,100 per annum considering an average duration of 6 months. Despite the minimum wage rate being determined by the government, the local contractors employ men at Rs 250 and women at Rs 200 per day, which is below the state wage rate.

Women of Mayurbhanj

Group Discussion with Women Participants, Keonjhar

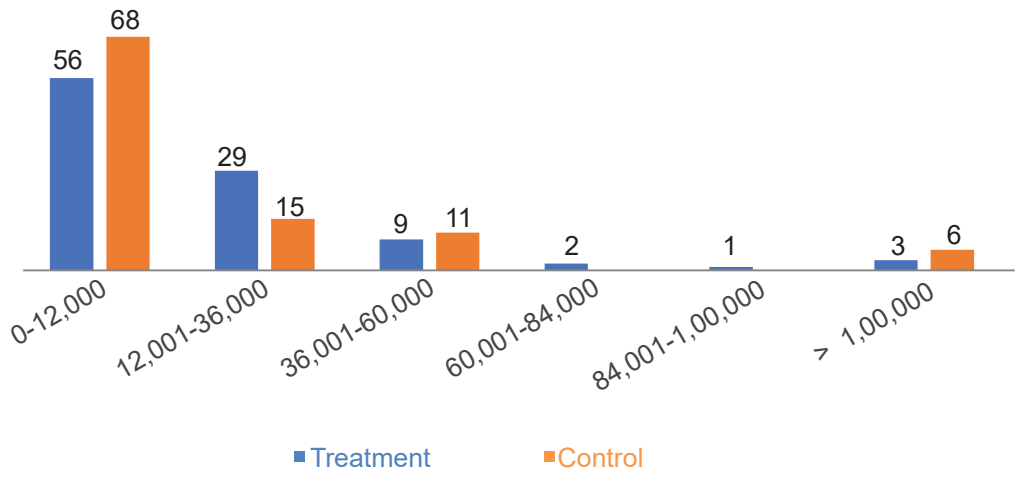
The households surveyed for the study, have various sources of income. While agriculture remains the primary occupation during monsoons, the households also engage in horticulture, livestock, labour work, MGNREGA, forest produce along with selling traditional drinks such as 'Handia'[10] and services such as driver. In the project villages **56%** of HHs have an annual net disposable income[11] of Rs 0–12,000, **29%** households responded as having an annual net disposable income of Rs 12,001-36,000, **9%** have an income of Rs 36,001 -60,000, **2%** reported having an income of Rs 60,001-84,000, and **1%** of HHs have an income of Rs 84,001-1,00,000. **3%** had a household income of Rs 1,00,000 and above.

6. https://mnregaweb4.nic.in/netnrega/avg_wage_paid.aspx?fin_year=2022-2023&source=national&Digest=tcKvOx2xp47V1TJeb2KhXQ
7. https://odisha.gov.in/sites/default/files/2022-03/Economic_Survey_2021-22_0.pdf
8. http://phdma.odisha.gov.in/sites/default/files/2022-06/TheEconomicLimits_Odisha.pdf
9. https://labourdirectorate.odisha.gov.in/sites/default/files/2023-04/DOC-20230406-WA0031..pdf
10. A traditional drink made by fermenting rice
11. Net Disposable Income = Gross Income – Cost

For HHs in the control group, the highest income category reported was of Rs 0-12,000, by **68%** households, **15%** have an income between Rs 12,001-36,000, **11%** have an income between Rs 36,001-60,000. No household reported disposable income in the category of Rs 60,000-84,000, and Rs 84,000-1,00,000 respectively. **6%** of HHs have reported an income of over Rs 1,00,000 annually. Most of the households in both project villages and the control group have a net disposable income between Rs 0-12,000. Some HHs reported taking an agricultural loan of Rs 20,000-30,000 for buying inputs such as fertilisers, seeds and hiring a vehicle such as the tractor for ploughing the field.

During the survey, most households did not reveal their actual income. The study team collected net disposable income data by asking them about different sources of income and expenditure on each activity. The income from various sources was deducted from expenditure to get the net value.

Annual Net Disposable Income - In Rs (%)



The average annual net disposable income is measured as Rs 23,000 in the surveyed villages. It is calculated as Rs 23,104 for project village HHs and for control group it stands at Rs 22,594 per annum.

Income Group (In Rs)	Project villages			Control Group		
	No.	Percent (HHs)	Average Net Disposable Income	No.	Percent (HHs)	Average Net Disposable Income
0-12,000	116	56	9,302	36	68	9,098
12,001-36,000	59	29	19,475	8	15	27,650
36,001-60,000	18	9	48,491	6	11	41,250
60,001-84,000	5	2	72,600	0	0*	-
84,001-1,00,000	3	1	91,467	0	0*	-
Over 1,00,000	6	3	174,033	3	6	133,760
Total	**207**	**100**		**53**	**100**	

**The HHs did not report any surplus/savings*

Farm-Based Income

- The average annual income of 242 households from farm-based activities which mainly includes activities such as agriculture, horticulture/kitchen garden, livestock etc. is Rs 34,217.[12] It was observed that most HHs cultivate paddy and vegetables that are rain-fed. Due to lack of irrigation facilities, farmers can sow a single crop in a year and vegetables are grown for personal consumption only. Households have cattle and yeild an average of 1-2 litres of milk daily, used for self-consumption. Households sell goats and hens. Poultry is mostly sold during medical emergencies in the households.

Non-farm Based Income

- The average annual income of 177 households from non-farm based activities such as income from migration, work undertaken under MGNREGA, wage labourer, self-employment etc. is at Rs 42,822.

Income from MGNREGA

- The average annual income of 88 households from MGNREGA was reported at Rs 6,050.

Income from Forest Produce

- Average income from common land and forest produce was reported as Rs 6,745 for 31 households. Most of the HHs said they did not have income from common land and forest produce.

Income from Other Sources (Social Security Schemes)

- Average income from other sources which includes social security benefits from Direct Benefit Transfers such as KALIA, Kisan Samaan Nidhi Yojana, Madhu Babu Pension Yojana (Widow pension, Handicap pension and old age) was measured as Rs 5,174 for 23 HHs.

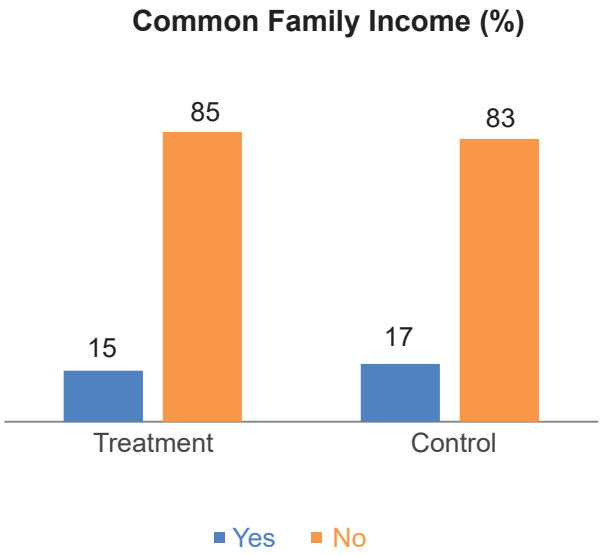
Salaried Income

- 3 households with salaried people have an annual average income of Rs 57,000.

12. Data from primary survey

Common Family Income

Households were asked if they had a common family income - **85%** of HHs in project villages and **83%** in the control group did not have any common family income while **15%** of project villages and **17%** of the control group households said they do. Some of the responses for households not having any common family income can be attributed to them being engaged in the service sector. While some households reported that they were managing small enterprises such as grocery stores or cycle repair shops, most of them engaged in rain-fed agriculture.



Agriculture

In India, small and medium farmers form the bulk of farmers contribute to **54%** of the workforce. These farmers are mostly from marginalised sections with limited access to education and social protection. More than **85%** of farmers cultivate crops and vegetables in less than 5 acres which is mostly rain fed, thereby making households dependent on wage work or non-farming activities during non-farming seasons.[13]

Forest Produce

Average Landholding

The average landholding size of project households stands at 2 acres, with average irrigated land at 1 acre per HH and non-irrigated land at 1 acre per HH. The non-irrigated land is dependent on rainfall for any type of cultivation activity. However, irrigated land is available only for 6 months during a year.

	Cultivable Land		Non-Cultivable Land
Total Area	**Irrigated Land (Irrigation Infrastructure Available)**	**Non-Irrigated (Rainfed)**	**Fallow Land**
2 Acres	**1 Acre**	**1 Acre**	**Data Not Captured**

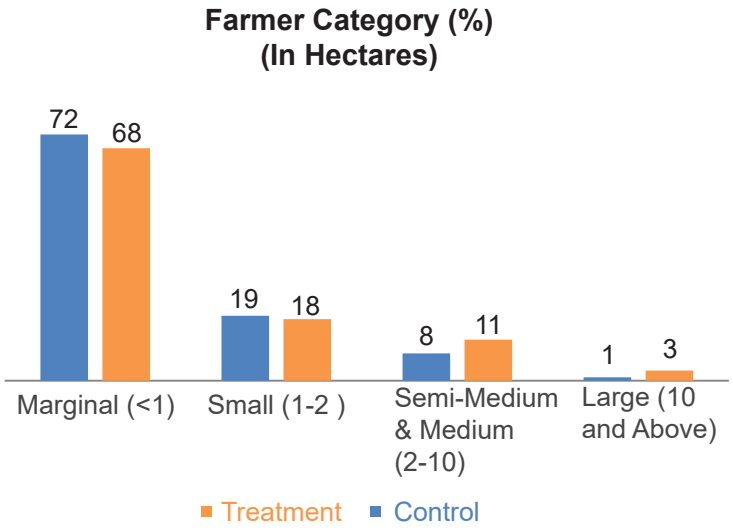
13. https://www.downtoearth.org.in/blog/agriculture/future-of-indian-agriculture-and-small-farmers-role-of-policy-regulation-and-farmer-agency-75325

Types of Crops

Crops Grown	Average Annual Yield Per Acre (In Quintal)	Annual Income (In Rs)	Annual Expenditure (In Rs)	Annual Surplus (In Rs)
Paddy, maize, small millet, cow pea, arhar, mustard etc.	10	30,000	10,000	20,000
Name of Vegetables/ Fruits				
Onion, chilies, garlic, tomatoes, beans, bitter gourd, brinjal etc.	1	10,000	2,000	8,000

Type of Farmers and Landholding Size

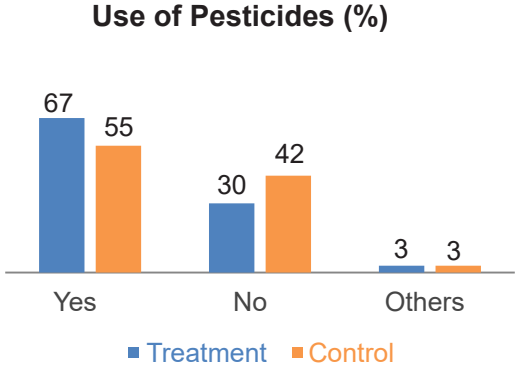
The baseline study tried to map the category of farmers based on their landholding size in both the districts. In the project villages marginal farmers having a landholding of 1 hectare or less stands at **68%** and the same for the control group is at **72%**. Small farmers with a landholding of 1-2 hectares form **18%** of the project villages and **19%** of the control group. Further, medium and semi-medium farmers with a landholding of 2-10 hectares is at **11%** for project villages and **8%** for the control group.



Large farmers owning 10 hectares or more formed **3%** in the project villages and **1%** in the control group. For both the groups, most of the households were marginal farmers engaged in cultivation of paddy during harvest seasons along with vegetable and fruit cultivation and kitchen garden in non-harvesting seasons.

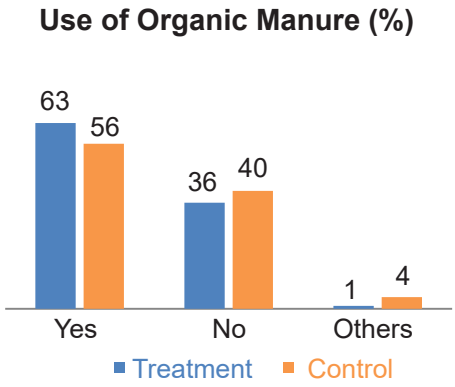
Use of Pesticides and Chemical Fertilisers

67% of HHs from the project villages and **55%** from the control group mentioned using pesticides and chemical fertilisers, while **30%** from project villages and **42%** in the control group do not use them. Further, **3%** of HHs from project villages and **3%** from the control group said that they were not involved in farming activities.



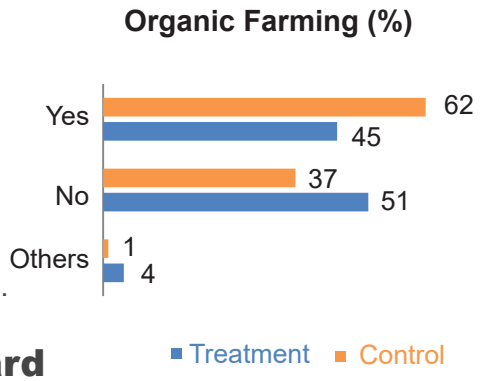
Use of Organic Manure

In terms of using organic manure in farming, **63%** of HHs from project villages and **56%** from the control group mentioned using it. **36%** of HHs from project villages and **40%** in the control group said they were not using organic manure. **1%** of HHs in project villages and **4%** in the control group are not engaged in farming activities.



Organic Farming

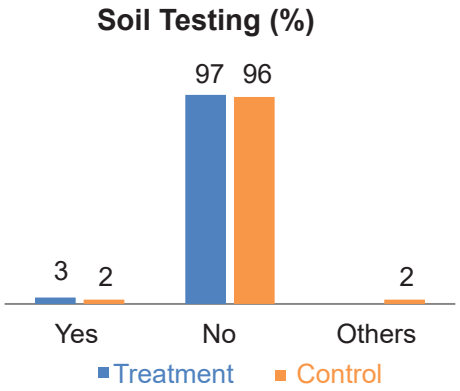
On asking HHs if they were willing to adopt organic farming, **62%** of HHs in the project villages and **45%** in the control group said that they were willing to do this. **37%** from project villages and **51%** from the control group said they were not willing to adopt. **1%** of HHs in the project villages and **4%** of control group did not respond.

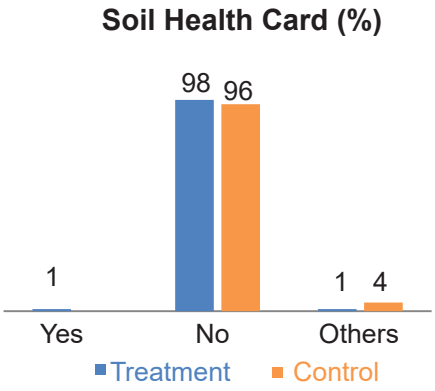


Soil Testing and Soil Health Card

Soil testing is a way to determine health of the soil which further helps the farmer in growing crops or vegetables. Status of soil health with respect to the nutrient component can be accessed by the households undertaking farming. The Soil Health Card (SHC) is a government scheme by the Ministry of Agriculture and Farmer's Welfare. With the SHC, households can maximise the yield by improving health of their soil.

Households in both the project villages and the control group were asked if they had undertaken soil testing, only **3%** of HHs in project villages and **2%** in the control group said that they had undertaken soil testing to understand nutrient deficiencies/fertility, while **97%** of project villages and **96%** of the control group households had not undertaken the same. The remaining **2%** of the control group households did not have any information on soil testing.



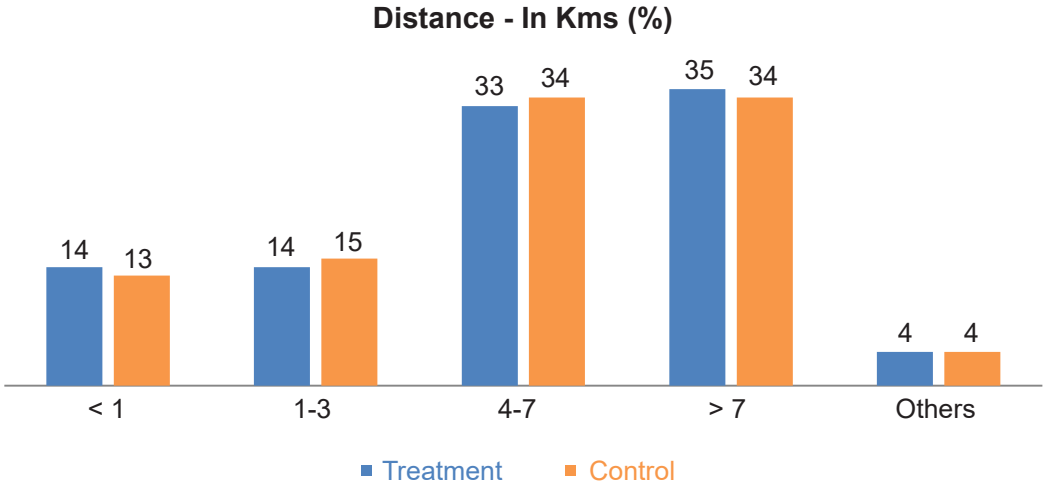


Additionally, **1%** of HHs in the project villages had received SHCs, while **98%** of project villages and **96%** in the control group did not. **1%** of project villages and **4%** of the control group did not respond. HHs should be provided with information on the importance of conducting soil testing, so that they can chose the right fertiliser and quantity to be used to improve their crop yield.

Markets to Sell Produce

Local traders purchase **40%** of the produce, approximately **40%** is sold in local and weekly markets, and the remaining **20%** is traded through the Block Market.

35% of HHs in project villages and **34%** in the control group sell their produce in the main market/block mandi which is more than 7 kms from their village. **33%** of HHs in project villages and **34%** in the control group said that the market was at 4-7 kms, which is a place from where local traders buy the produce. **14%** of HHs from project villages and **15%** from the control group said they had to travel a distance of 1-3 kms and sell the produce in weekly markets. Lastly, **14%** HHs in project villages and **13%** in the control group travel a distance of less than 1 km to sell their produce in their village or nearby villages. However, **4%** of HHs in project villages and the control group mentioned 'Others' option which includes self-consumption. Farmers have mentioned that due to a lack of transportation facilities, distance, and low yield, they sometimes spend more on transportation than the cost of the produce.



Access to Best Price of Crops

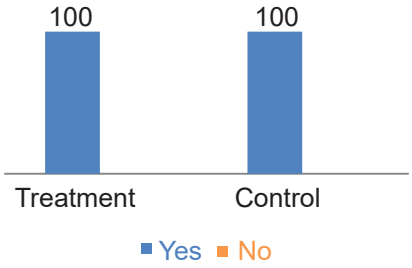
Households were asked if they get fair prices for their crops. **55%** of HHs in project villages said they got fair prices while **45%** did not. Whereas, in the control group, **45%** of HHs agreed they get a fair price while **55%** did not. HHs attributed lack of access to proper market facilities nearby and the absence of transportation facilities as factors for not getting fair prices for their crops. The organisation can help in developing and sustaining a market infrastructure along with linking households with wholesalers and government facilities where they can sell their crops without suffering financial losses. Moreover, HHs mentioned not facing any difficulty in selling their crops, as most of them sell their produce in the local weekly markets or to local traders.

Farming Tools

All HHs in both project villages and the control group mentioned having and using farming tools.

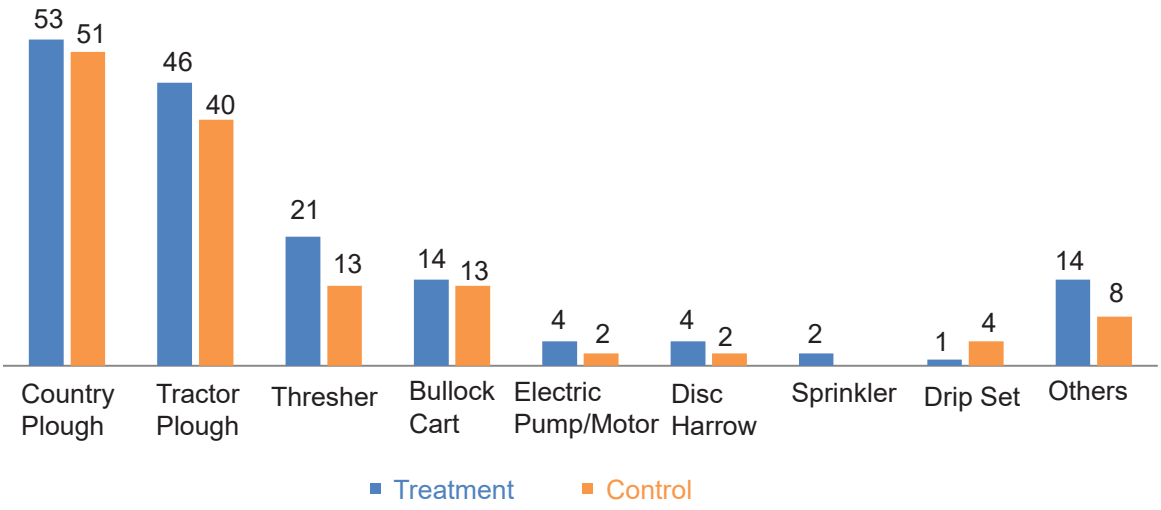
53% of HHs in project villages mentioned using country plough, **46%** mentioned tractor plough, **21%** mentioned thresher, **14%** mentioned bullock cart, **4%** mentioned electric pump/motor, **4%** mentioned disc harrow, **2%** mentioned sprinkler, **1%** mentioned drip set and lastly **14%** mentioned other tools such as power tiller etc.

Access to Farming Tools (%)



In the control group, **51%** of HHs use country plough, **40%** use tractor plough, 1**3%** use thresher, **13%** use bullock cart, **2%** use electric pump or motor, **2%** use disc harrow, **4%** use drip set and **8%** mentioned using other tools such as power tillers for farming and allied activities. None of the households in the control group reported using sprinklers, while for both the groups, country plough and tractor are the most used tools for the purpose of farming.

Farming Tools (%)



Solar Water Pump

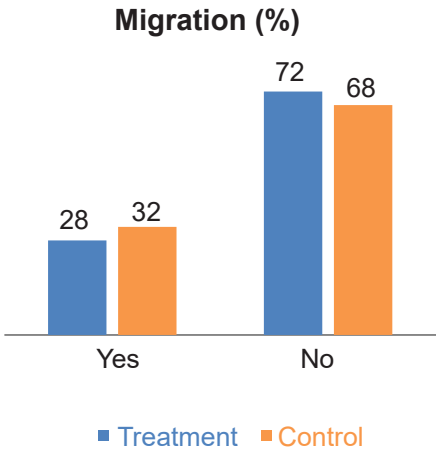
Crop Loan

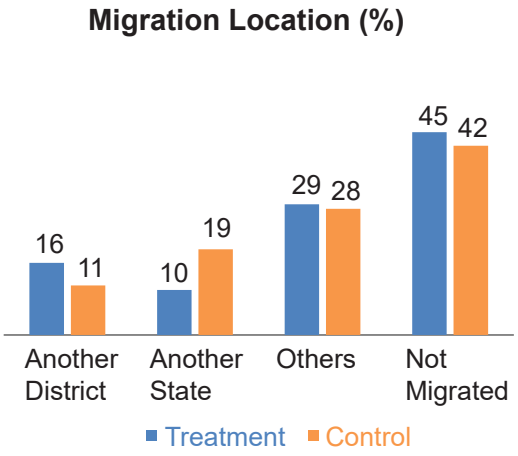
The HHs mentioned taking a loan for agriculture of an average amount of Rs 20,000-30,000 mostly from SHGs at an interest rate of **2.5%** p.a while some HHs also mentioned taking the loan at an interest rate of **7-10%** p.a from banks such as SBI. Loans are mostly taken for buying animals such as goats and undertaking farming and allied activities such as purchasing seeds, farming tools etc.

Migration

The migration in Odisha is mostly seasonal. Most people migrate in search of better livelihood opportunities during non-agricultural seasons. On asking HHs in the project villages, **28%** said they migrate and **72%** did not. While in the control group, **32%** of HHs migrate and **68%** do not. On further asking the HHs where they migrate to, **16%** HHs of project villages mentioned migrating to another district, **10%** mentioned migrating to another state while **45%** mentioned not migrating and **29%** mentioned other places within their district.

In the control group,**11%** of HHs mentioned migrating to another district, **19%** mentioned migrating to another state, **42%** did not migrate and **28%** said other locations such as Duburi, Mayurbhanj or within their district. During discussions, HHs mentioned seasonal migration to places like Gujarat, Bengaluru, Secunderabad, and Delhi as daily wage labourers in brick kilns.



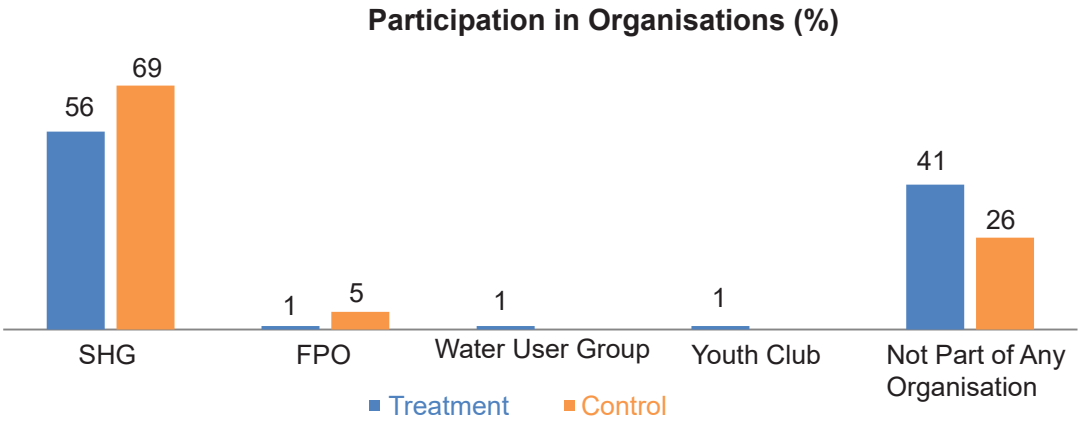


Participation in Social Organisations

Households participating in the baseline study, were asked about their participation in social organisations at the community level. In the project villages, **56%** of HHs were part of Self-Help Groups (SHGs), **1%** were part of Farmer Producing Organisations (FPOs), **1%** were part of the water user group, **1%** part of the youth club and **41%** mentioned not being part of any organisation.

In the control group, **69%** of HHs were part of SHGs, **5%** were part of FPOs, and the rest **26%** were not part of any organisation.

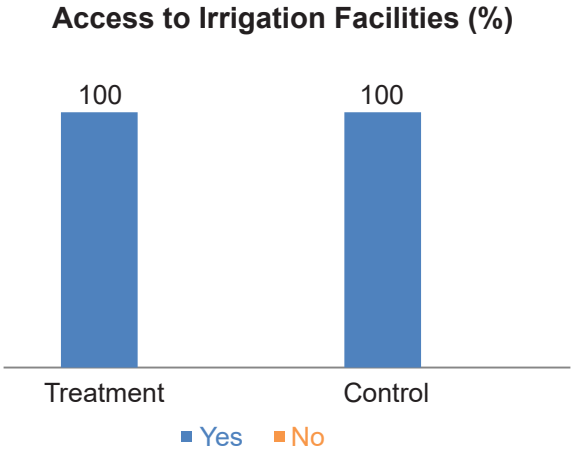
Households that reported being part of SHGs, said their wives were part of the SHGs established by Mission Shakti (under Integrated Child Development Scheme (ICDS)) and some other civil society organisation working in the region earlier. Currently, SHGs are undertaking inter-loaning while some of them are defunct. The organisation can revive SHGs and involve women in Income Generation Activities (IGAs) in collaboration with the government and livelihood mission of Odisha.



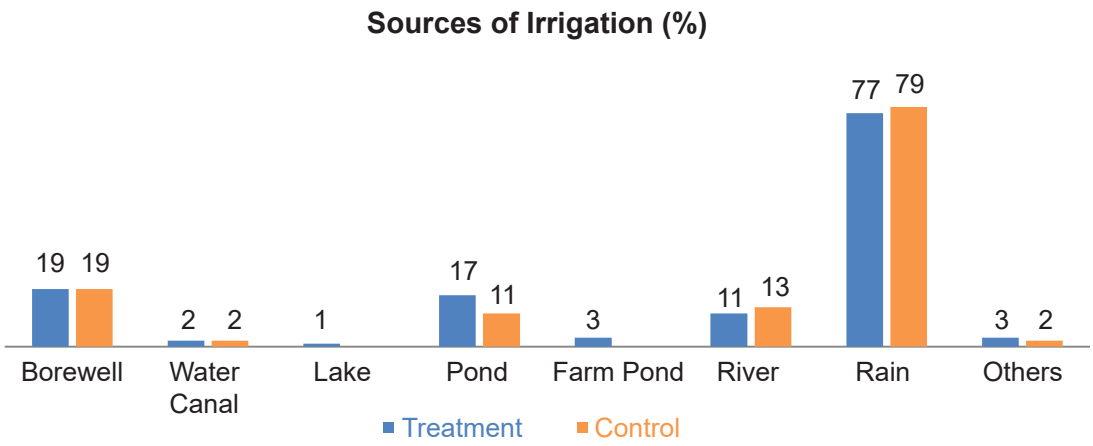
Water Resources

Irrigation Facilities

The households in Mayurbhanj and Keonjhar districts are primarily involved in practising agriculture as their primary occupation. Both the areas face acute shortage of water for irrigation purposes and their farming is predominantly rainfed. **100%** of HHs in project villages and the control group mentioned having access to irrigation facilities.



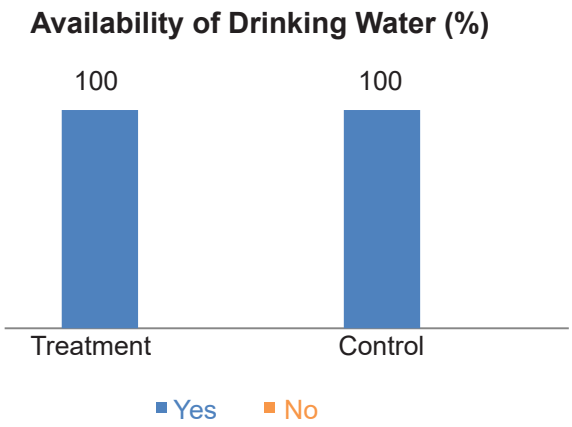
In project villages, **77%** of HHs responded that they are dependent on rain for irrigation, **19%** mentioned borewells, **17%** mentioned ponds, **11%** mentioned river water, **3%** mentioned farm ponds, **2%** mentioned water canals and **1%** mentioned lake water. While in the control group, **79%** of HHs mentioned rainwater, **19%** mentioned borewell water, **13%** mentioned river water, **11%** mentioned pond water, and **2%** mentioned water canal. In both project villages and the control group, the households are heavily dependent on rainwater for irrigation followed by borewells. Rivers and canals available are located at a considerable distance making it difficult for the households to channelise water in the fields. Most of the time one person from each HH makes several trips carrying 100 litres of water on their shoulders for irrigation.



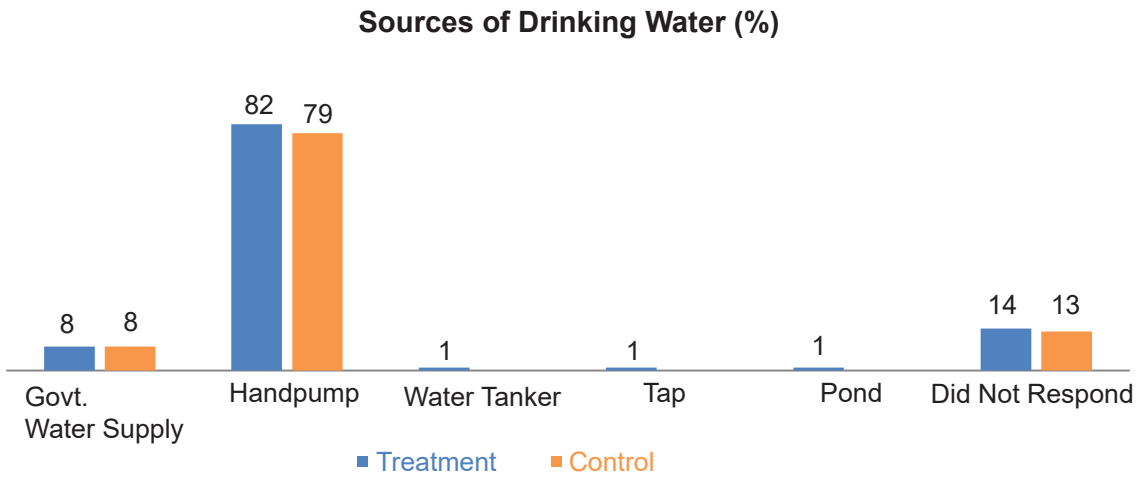
Drinking Water Sources and Water Quality

All HHs in project villages and the control group have access to drinking water. Communities use different water sources for drinking purposes.

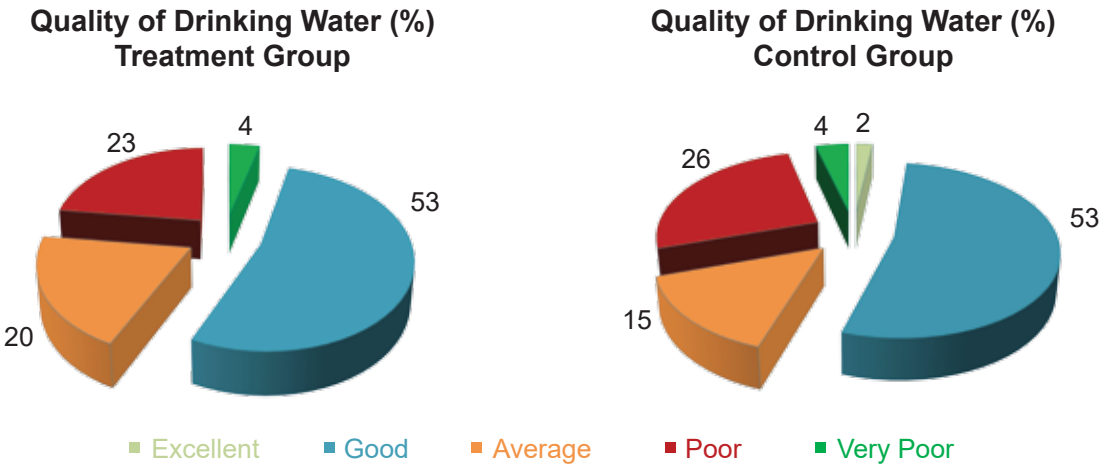
Findings from the study revealed that, in project villages **8%** of HHs use government water supply, **82%** hand-pumps, **1%** are dependent on water tankers, **1%** use tap water, **1%** pond water and **14%** of HHs did not respond.



In the control group, the percentage of HHs using different drinking water sources are as follows - **8%** government water supply, **79%** handpumps and **13%** did not respond. In both groups, the HHs use handpumps, but during summer the water table recedes, and communities often face difficulties in drawing water. Some handpumps were dysfunctional and required repair. Given that the region faces water scarcity especially in the summers, the upkeep of handpumps installed by the Panchayat or government becomes necessary.



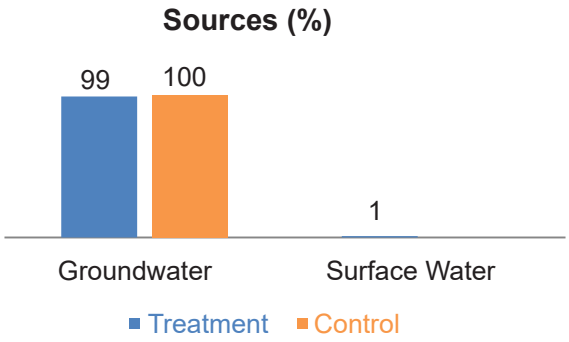
In terms of the quality of drinking water, in the project villages **53%** of HHs found it to be good, **23%** rated the water quality as poor, **20%** as average and **4%** as very poor. In the control group, **53%** of HHs rated the quality of water as good, **26%** as poor, **15%** as average, **4%** as very poor and **2%** as excellent. Poor quality of water or contaminated water often gives rise to health ailments such as diarrhoea, dysentery and hepatitis A.[14] The quality of drinking water can be improved in the region at the household level by encouraging people to filter or boil their water before consuming it, thereby reducing the chances of infection.



14. https://shorturl.at/axCL9

Sources of Household Drinking Water

In terms of the source of household drinking water, **99%** of HHs in the project villages and **100%** in the control group draw water from the ground (handpump), while **1%** of HHs in project villages use surface water (river/canal) for drinking purposes. There is a high dependence on groundwater amongst the HHs for drinking water purposes.



Usage Pattern of Groundwater

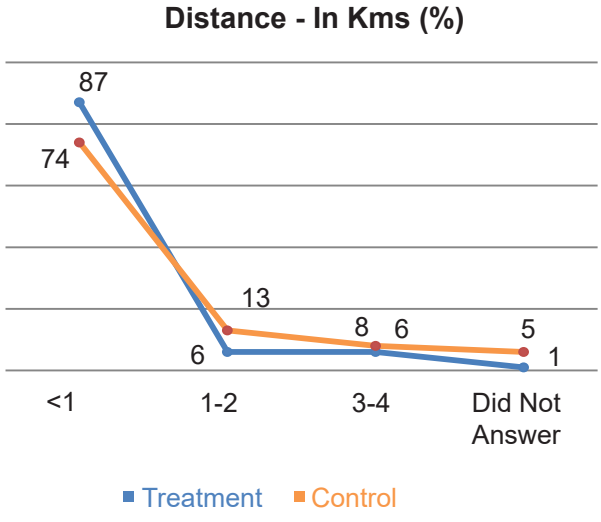
The usage pattern of groundwater sources in project villages is as follows- use of tube wells stands at **57%**, **10%** use bore wells, **8%** dug wells and **25%** did not respond. In the control group, **62% of** HHs draw water from the tube wells which forms the largest category, followed by bore wells at **13%**, **4%** use dug wells and **21%** did not respond. In both groups, HHs are dependent on groundwater from tube wells, while other sources are present, their usages are limited to factors such as distance and functionality.

Usage Pattern of Surface Water

The study found ponds to be the largest source of surface water in both project and control group villages, with **21%** of HHs in project villages and **25%** in the control group utilising it. This is followed by lake water at **8%** , river water at **3%** , **1%** stream water and **68%** responded not applicable. In the control group, **8%** mentioned lake water, **2%** of the HHs each responded river and stream water respectively.

Distance Travelled to Fetch Water

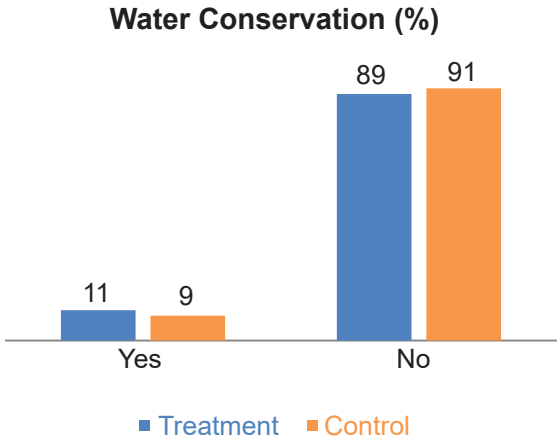
In both project villages and the control group, HHs travel less than 1 km to access water. For project villages the percentage stood at **87%** and for the control group at **74%**. **6%** of households travel 1-2 kms and 3-4 kms respectively in the project villages. **1%** did not answer. In the control group, **13%** of HHs travel 1-2 kms, **8%** cover 3-4 kms and **5%** did not respond. Most of the households get water within a range of 1 km or less, but they make several trips to fetch water throughout the day.



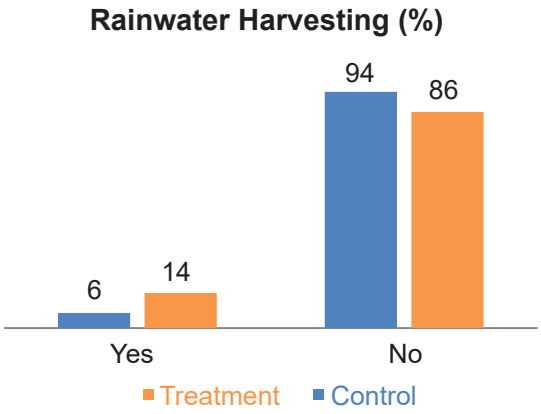
This makes it difficult to engage in other activities. Increasing the number of water resources and maintaining the same, would not only save time of families, but also help in improving their work efficiency. Health related problems such as neck and back pain that arise from carrying water on shoulders can also be minimised.[15]

15. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2939590/

Water Conservation Practices

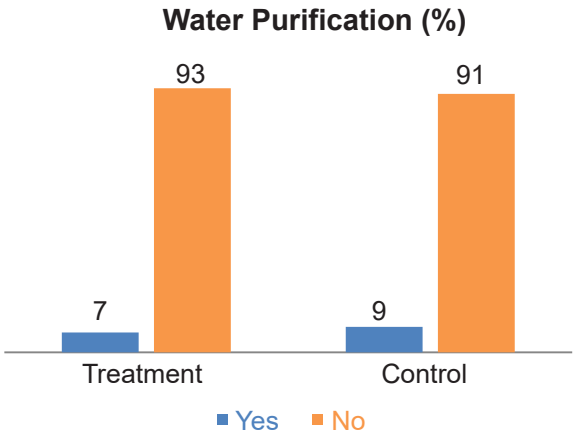


As per the graph, **11%** of HHs in the project villages and **9%** in the control group affirmed that they conserve water while **89%** in project villages and **91%** in the control group were not undertaking water conservation. Given that the percentage of HHs practicing water conservation is low, and the area largely faces water scarcity, initiatives can be created to maximise efforts of water conservation especially during the monsoon season.



Households were further asked, if they were engaged in rainwater harvesting, **86%** in the project villages and **94%** in the control group reported not being engaged in rainwater harvesting, while **14%** in project villages and **6%** in the control group responded positively. HHs that are currently engaged in harvesting water can be identified as leaders that can further engage others that are not involved in this practice. Regions of Keonjhar and Mayurbhanj receive most of the rainfall during monsoons and face water scarcity. Hence it becomes imperative to undertake activities such as creation of farm ponds and water recharging facilities.

Water Purification Method

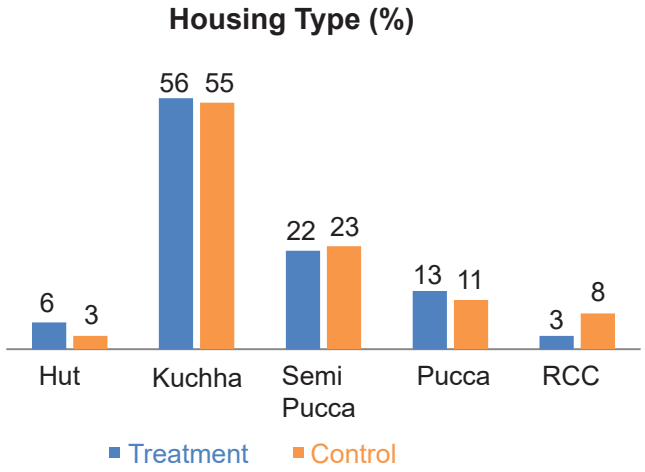


Treatment of household water in the absence of potable water supply becomes important, for accessing safe drinking water. The study explored if HHs undertake the practice of purifying water - **7%** in the project villages and **9%** in the control group responded positively towards purifying water before consuming through boiling, water purifiers and even with clothes. **93%** of HHs in the project village and **91%** in the control group do not purify water. Consuming water without proper purification leads to various health related risks, given that most of the HHs do not purify the water. The community should be made aware of traditional boiling methods or affordable ways that they can undertake, to avoid any health risks. Water borne illnesses such as Malaria, Dengue and Typhoid were also reported.

Housing and Sanitation

Types of Houses

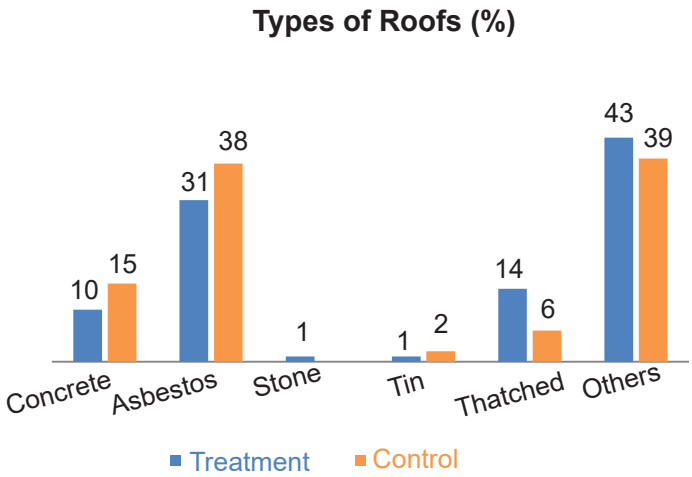
According to the graph of types of houses, **56%** of HHs in project villages and **55%** in the control group have Kuccha houses. Semi Pucca houses were reported by **22%** in project villages and **23%** in the control group. **13%** in project villages and **11%** in the control group mentioned having Pucca houses, **6%** in project villages and **3%** in the control group reside in huts, HHs having RCC roofed houses stood at **3%** in project villages and **8%** in the control group.



The graph highlights that Kuccha house is the most prevalent type in both the groups while the percentage of households having RCC houses is **6%** less than the control group. Households that have not yet availed of the Pradhan Mantri Awas Yojana (PMAY) can be linked with the scheme and avail the benefit of pucca houses.

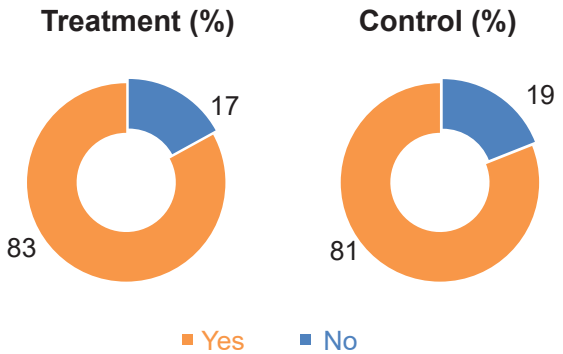
Types of Roofs

In terms of roof types that households have, in the project villages **31%** of HHs mentioned asbestos, followed by **14%** thatched roofs and **10%** concrete roofs. **1%** of HHs mentioned stone and tin roofs respectively and **43%** said others which includes tiled roofs and mud roofs. In the control group, **38%** of HHs reported asbestos roofs, **15%** concrete roofs, **6%** thatched roofs and **2%** mentioned tin roofs. Further, **39%** of HHs use other materials such as tiles and mud.



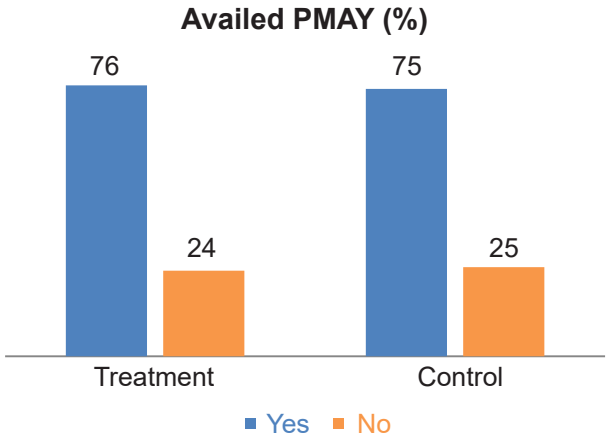
Ownership

On an average, there are 2-3 rooms in a house for both project villages and the control group. Further, in terms of ownership of the house, **83%** in the project villages and **81%** in the control group mentioned having ownership, while **17%** in project villages and **19%** in the control group do not have ownership.



Access to Pradha Mantri Awas Yojana (PMAY)

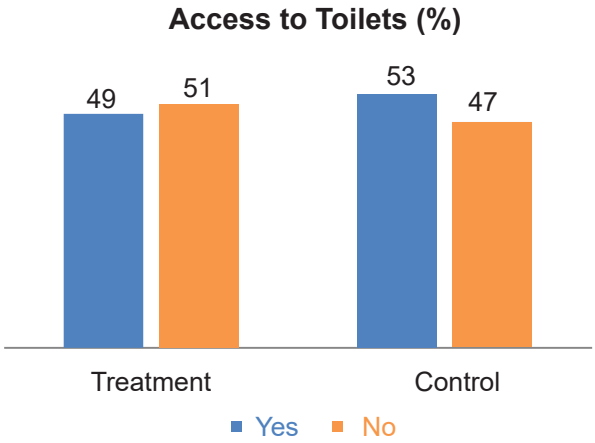
24% of HHs in project villages and **25%** in the control group have availed the PMAY. However, **76%** of HHs in project villages and **75%** of the control group have not availed benefits of the scheme. During the discussions, some HHs said they had given their names but allocation of the scheme was pending.



Access to Toilets

It was found during the field visit that HHs practice open defecation, despite toilets being built under the government scheme of Swachh Bharat Mission. The existing use of toilets remains negligible due to faulty design, low-quality material used in construction, lack of water supply and the habitual practice of defecating in open.

From the survey it was found that **49%** of HHs in project villages and **53%** in the control group had access to toilets. **51%** of HHs in project villages and **47%** in the control group do not have access. On comparing the groups, percentage of HHs not having access to toilet facilities is more than **50%** in project villages while more people reported having access to the same in the control group.



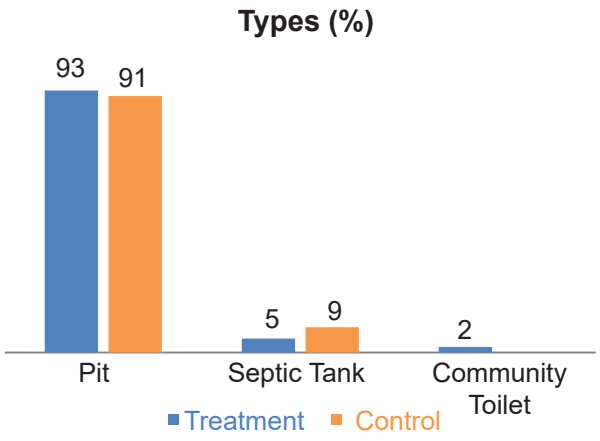
Interactions with HHs in both districts, revealed that, despite access to toilets **90%** of HHs prefer to defecate in the open. Some reasons for practicing open defecation are lack of funds to construct toilets and poor quality of material used for construction.

Household Toilet, Mayurbhanj

Household Toilet, Keonjhar

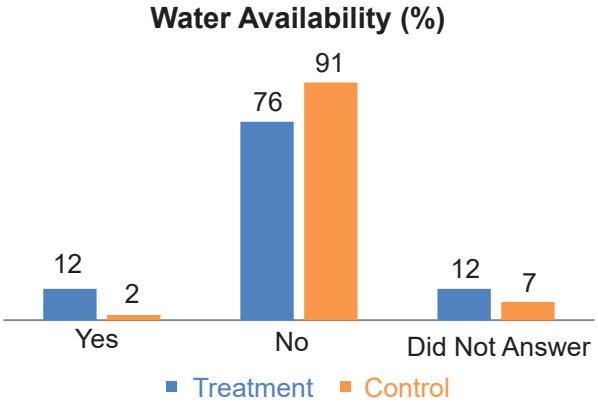
Types of Toilets

According to the survey, HHs mostly use pits and community toilets are rare. The graph shows that **93%** of HHs in project villages have a pit, **5%** use septic tanks, and **2%** mentioned having community toilets. In the control group, **91%** of HHs reported pits and **9%** mentioned having septic tanks.



Water Availability in Toilets

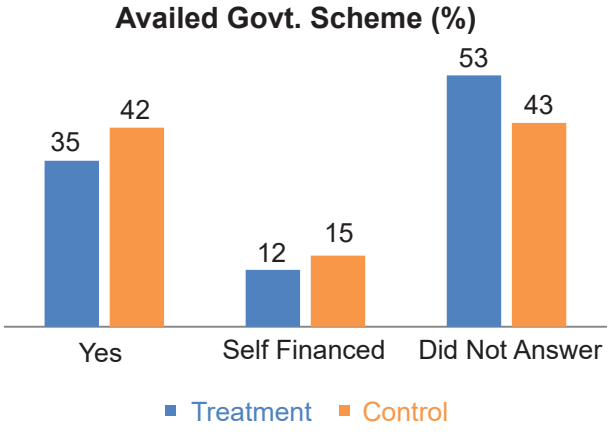
With regards to water availability in the toilets, **12%** of HHs in project villages and **2%** in the control group have water available, while **76%** of project villages and **91%** of the control group do not. **12%** of HHs in project villages and **7%** in the control group did not answer. The unavailability of water coupled with low depth of the pot are some of the reasons toilets are not in use.



Toilets Constructed under the Swachh Bharat Mission

In the project villages, **35%** of HHs built their toilet under the government scheme, **12%** constructed it themselves by financing it entirely and the rest **53%** did not respond. In the control group, **42%** of HHs have toilets constructed under the government scheme, **15%** have self-financed the construction, and **43%** did not respond.

HHs that financed their toilets spent an average amount of Rs 12,000. **35%** of HHs in project villages and **40%** in the control group mentioned that their toilet is **100%** financed by the government. For **1%** of HHs in project villages and **2%** in the control group, toilets were partially financed by the government. However, **64%** of HHs in project villages and **58%** in the control group did not respond.

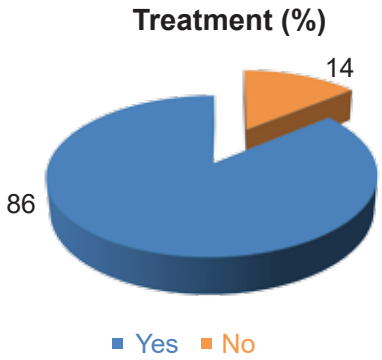


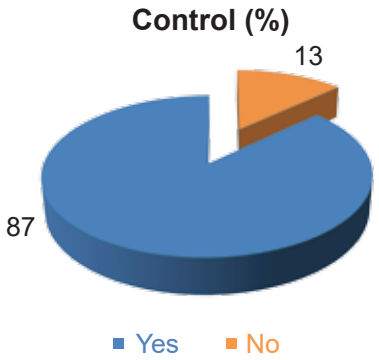
19% of HHs in the project villages availed a subsidy of Rs 12,000. The graph shows that less than **50%** of toilets were constructed under the government scheme of Swachh Bharat. However, toilets built under the government scheme, were of poor quality and design and in need of reconstruction and repair.

Electricity Supply

Access to Electricity

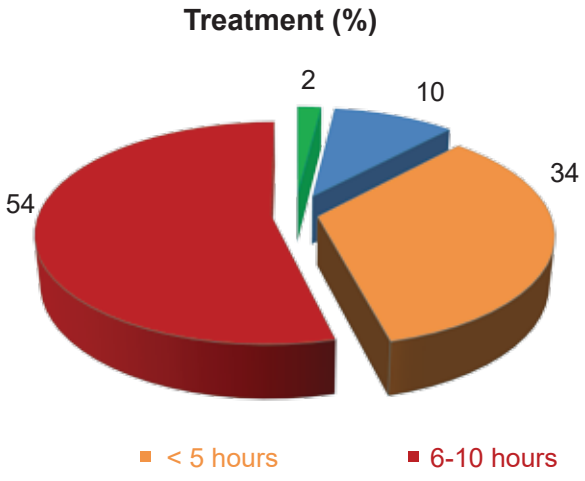
Access to electricity stands at **86%** for HHs in project villages and at **87%** for the control group. While **14%** and **13%** of HHs in project villages and the control group do not have electricity supply, and draw electricity from nearby poles.

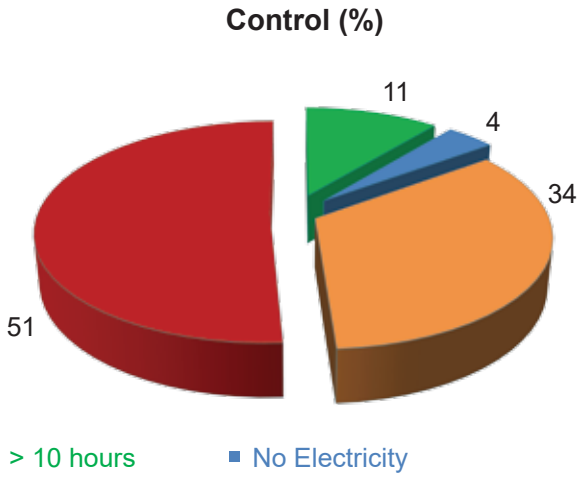




Duration of Electricity Supply

The study shows that **54%** of HHs in the project villages and **51%** in the the control group receive 6-10 hours of electricity supply. **34%** of HHs from project villages and the control group get less than 5 hours of electricity supply, while **2%** of HHs in project villages and **11%** in the control group receive more than 10 hours of electricity supply. Most of the households in both the groups receive an average of 6-10 hours of electricity supply.





Waste Collection Mechanism

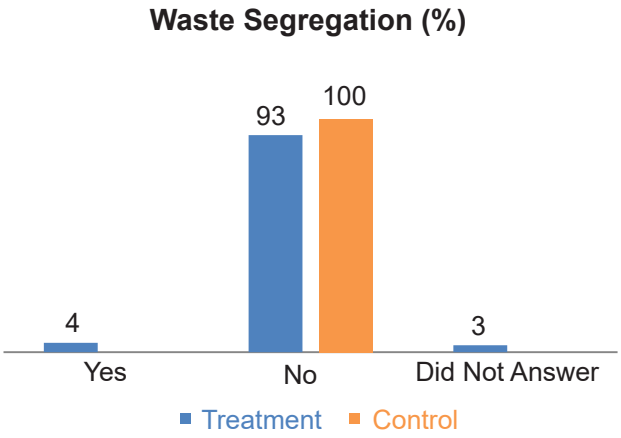
On asking HHs if they had any mechanism in place for collection of waste, less than **2%** of HHs in the project villages mentioned having a dedicated place in the community where they collect waste. None of the control group HHs mentioned having any such mechanism.

Frequency of Waste Collection

Out of the 3 HHs in the project villages that did mention having a waste collection mechanism, only 1 HH reported daily collection of waste while 1 HH did not respond, and the other HH mentioned waste being collected on a monthly basis.

Waste Segregation

HHs in project villages and the control group were asked if they were practising waste segregation which includes segregating dry waste and wet waste. **93%** of HHs in project villages and **100%** in the control group mentioned not having any such system in place whereas **4%** of HHs in the project villages mentioned they segregate waste and **3%** did not respond.

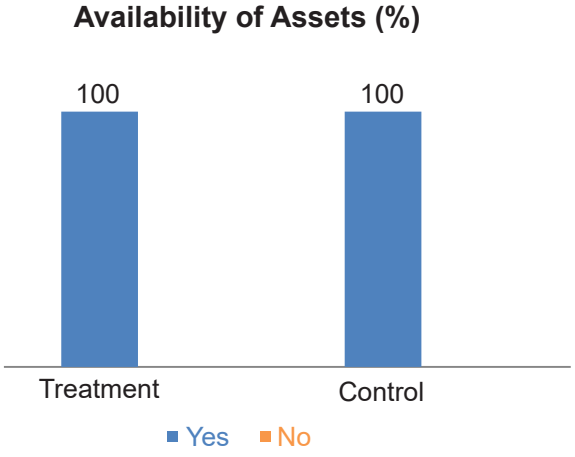


None of the HHs reported door-to-door pickup of waste, and most HHs segregated waste at the household level using much of the wet waste such as vegetable peels and animal waste as compost while disposing the rest nearby.

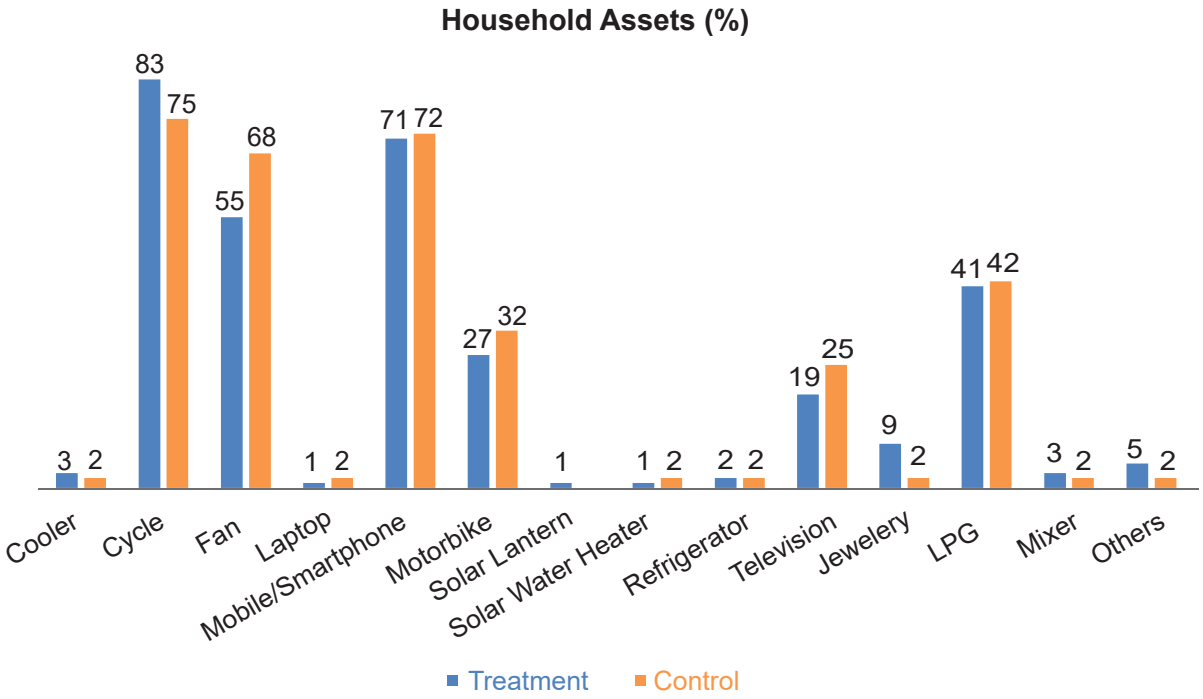
Household Assets

All households surveyed have one or more assets mentioned in the graph.

HHs in project villages that mentioned air coolers are **3%**, cycles **83%**, fan **55%**, laptops **1%** and **71%** have feature phones or smartphones. Despite possessing mobile phones, ownership and access is with the men of the family while women are secondary users.



Most of the HHs had feature phones and not smartphones, without access to internet. Women were mostly not familiar with internet or mobile-based applications such as WhatsApp, YouTube etc. Further, **27%** mentioned bikes, **1%** solar lanterns, **1%** solar water heaters, **2%** mentioned refrigerators, **19%** televisions and **9%** jewellery. **41%** of HHs have LPG cylinders under the Ujjawala Yojana, but most of them have not refilled their LPG cylinders given the high cost and use earthen stoves - 'chulha' for cooking purposes. **3%** have mixers or food processors and **5%** mentioned other assets such as tractors and autos. In the control group, **75%** of HHs had cycles, followed by **72%** having mobiles/smartphones and **42%** LPG cylinders.



Loan Source and Objective

The Kisan Credit Card Scheme is intended to provide short-term credit to farmers through cash credit for raising different crops and carrying out activities allied to agriculture. Beneficiaries mentioned that under the scheme, an animal loan of up to Rs 1 lakh is provided for constructing an animal shed and buying animals on **0%** interest p.a.[16]

Most of the HHs have taken loans from SHGs and banks such as Bank of India and SBI at the Badampahar branch in Mayurbhanj. Loans were taken for an average of 1 year by the households at an average interest rate of **12%** p.a. Most of the women did not have any information about the loans taken or interest being paid, highlighting their limited involvement in matters related to finances and financial decision-making.

The objective behind taking loans as mentioned by the HHs was for agriculture, setting up shops, marriages, health treatments, building and repairing houses as well as for purchasing livestock such as goats and even for buying vehicles such as tractors. The discussions revealed that most of the loans were taken for agriculture, as it is the mainstay of communities.

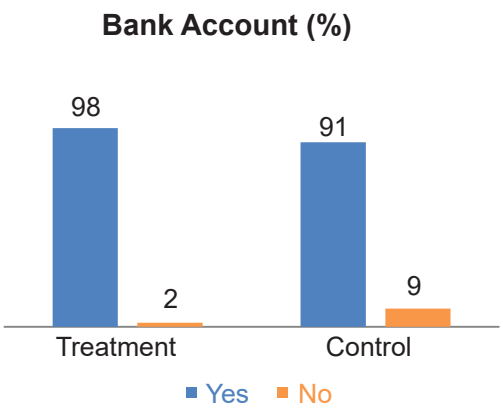
16. https://odishabank.in/KCC

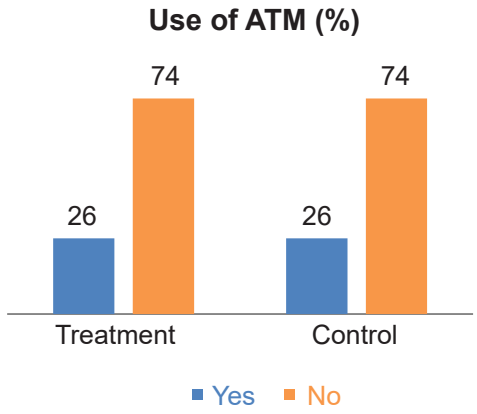
Financial Literacy

Access to Bank Accounts and ATMs

98% of HHs in project villages and **91%** in the control group have access to bank accounts, while **2%** of HHs in project villages and **9%** in the control group did not have bank accounts. On further probing the HHs if they were using ATMs for withdrawing cash, in project villages and the control group, **26%** reported using ATMs, while **74%** in project villages and the control group were not.

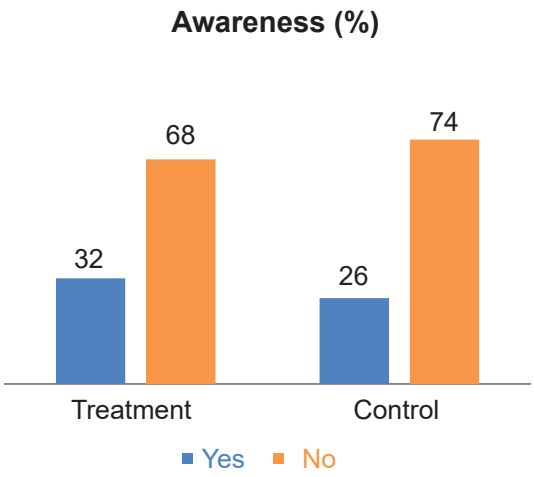
During FGDs, the HHs mentioned that despite having a functional bank account they prefer to withdraw cash directly from the bank, using their passbooks. ATMs are only used in case cash is required for emergency purposes. While the men were confident about using ATMs, the women preferred standing in queues and withdrawing cash from pass-books.





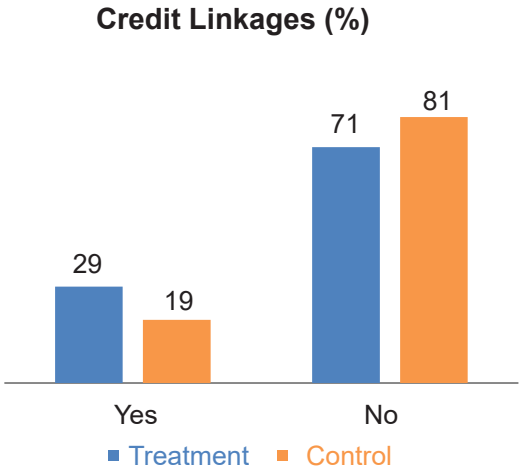
Awareness on Financial Products

The awareness of HHs in project villages on financial products such as fixed deposits and recurring deposits stood at **32%**, while **68%** of HHs were not aware of the same. In the control group, **26%** were aware of financial products and services that they could avail for saving purposes, but **74%** were unaware of the same. This underscores a need to create awareness in the community on different ways in which they can start saving money by organising camps on financial services available.



Access to Credit Linkages

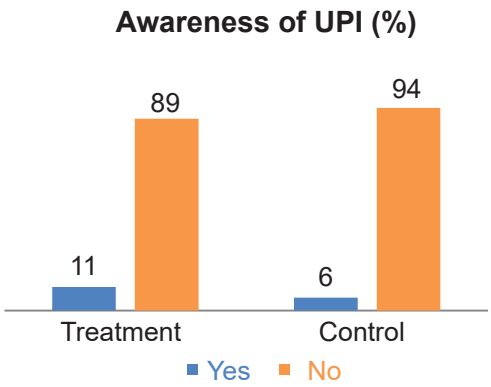
The study shows, **29%** of HHs in project villages and **19%** in the control group as having access to credit linkages. They generally access credit from SHGs and banks such as State Bank of India (SBI), Bank of India (BOI) and cooperative banks. **71%** of HHs in project villages and **81%** in the control group do not have any access to the same. The percentage of HHs not aware of accessing credit linkage was higher. Limited literacy especially amongst women along with the lack of awareness about available credit linkage facilities are some of the reasons behind low percentages of HHs accessing financial services.

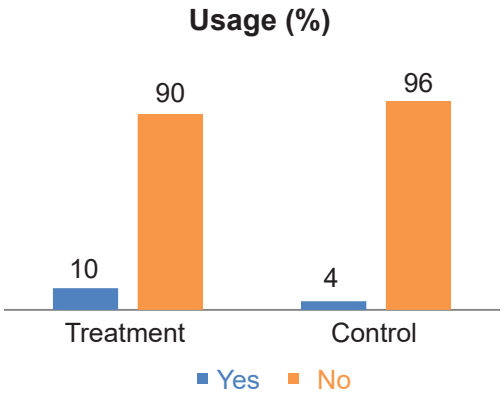


Awareness and Usage of UPI

The awareness about digital payment methods such as UPI stood at **11%** for HHs in project villages and **6%** for the control group. **89%** of HHs in project villages and **94%** in the control group were not aware and confident to make use of online payment methods such as UPI. One of the reasons for the lower percentage is due to limited access to smartphones and internet as well as lack of digital literacy among HHs. Digital literacy programs along with awareness and training programs on using UPI can be conducted for developing capacity to use and leverage internet related services.

10% of HHs in project villages and **4%** in the control group have used UPI for making payments while **90%** in project villages and **96%** in the control group have not used UPI for making payments for any other transactional purposes. Some of the financial applications that HHs use and are familiar with for online transactions are Google Pay, BHIM, PhonePe, etc.

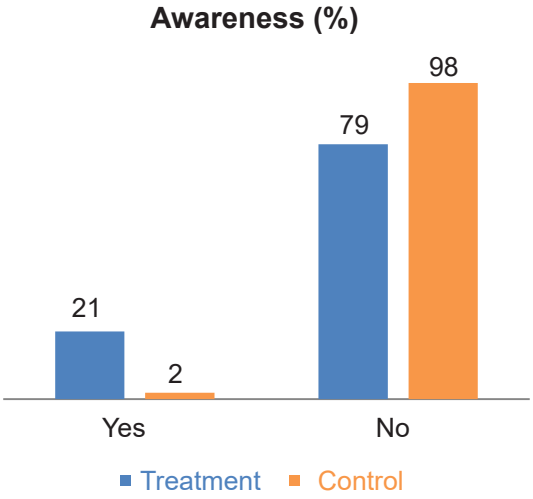




Access to smartphones with internet remains a challenge due to which there is limited knowledge about undertaking payments through UPIs. Further, limited financial literacy coupled with hesitancy of using digital methods of payment is also an underlying reason for lack of awareness and usage of UPIs. The HHs still prefer using traditional means of transaction in terms of making payments.

Financial Awareness Training

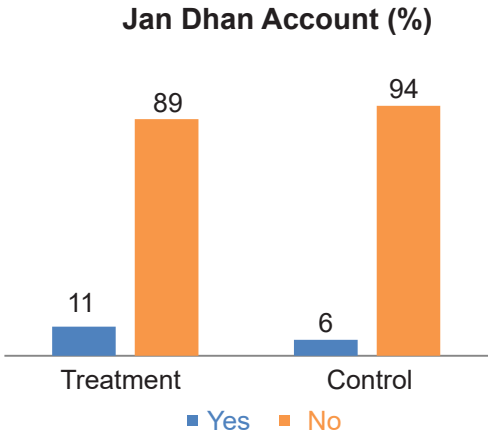
79% of HHs from project villages and **98%** from the control group have never received any training on financial awareness by the organisation. However, **21%** of HHs in project villages and **2%** in the control group were affirmative on having received the training. On probing further, HHs mentioned they were trained by the CInI team on loan facilities and methods to apply for loans from banks. However, none of the HHs mentioned receiving any training by the government department.



Access to Jan Dhan Account

The central government started the scheme of Pradhan Mantri Jan Dhan Yojana (PMJDY), a financial inclusion plan for especially those belonging to the marginalised sections of society.

In both districts, **89%** of HHs in project villages and **94%** in the control group did not have a Jan Dhan bank account and only **11%** of HHs in project villages and **6%** in the control group reported having the account.



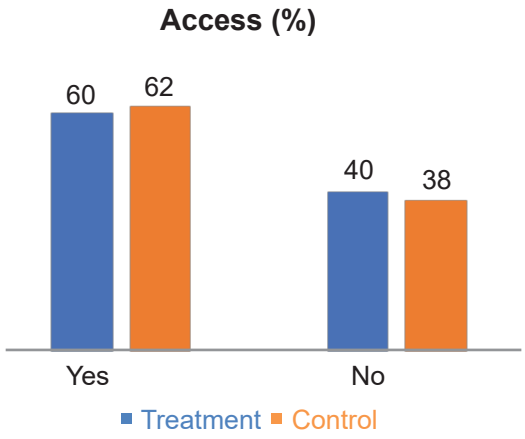
This underscores the need for further strengthening the rural financial linkages in both the districts by organising awareness camps on PMJDY, mobilising bank mitras to open Jan Dhan Accounts and detailing out the benefits they are entitled to, through the scheme. For example, Jan Dhan Account holders are eligible for a zero-balance account, direct benefit of cash transfer to the bank account for accessing services such as Direct Benefit Transfers (DBT), Atal Pension Yojana (APY), Micro Units Development & Refinance Agency Bank (MUDRA) scheme along with accident insurance and life insurance facilities for those holding the bank account.

Healthcare

The state of Odisha and especially the districts of Mayurbhanj and Keonjhar face multidimensional health issues due to various social, economic and geographical factors. The districts grapple with problems of anaemia amongst men, women and children, stunted growth and low weights in children, and seasonal diseases such as Malaria and Dengue. Early marriage is one of major problems that leads to early childbirth in young women causing difficult pregnancies.[17] Further, people in the age group of 30-40 years suffer from non-communicable diseases such as diabetes, kidney related issues and blood pressure. Lack of awareness regrading regular health check-ups coupled with sub-par public health infrastructure are some of the reasons for prevalent health conditions in the state.

Access to Quality Healthcare

The graph depicts access to quality healthcare for **60%** of HHs in project villages and **62%** in the control group. However, **40%** of HHs in project villages and **38%** in the control group do not have access to quality healthcare services. The data signifies that there is a considerable population that does not have access to quality health services. This should be ensured by village level health workers such as ASHAs and ANMs along with the block health department.



Prevalence of Diseases

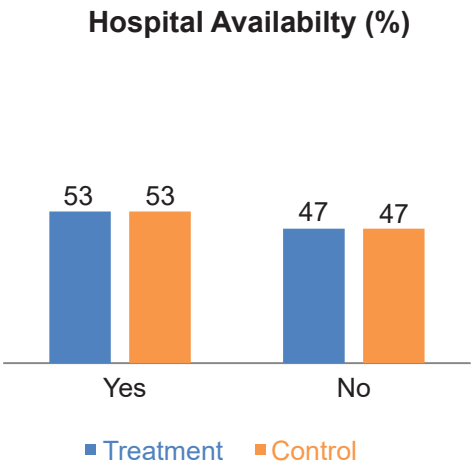
In the project villages, **20%** of HHs reported that some of their family members had suffered from water borne illnesses such as Malaria, Dengue and Typhoid, and in the control group, **23%** of HHs reported suffering from the same. In terms of Non-Communicable Diseases (NCDs), **8%** of HHs in project villages and **6%** in the control group mentioned suffering from NCDs such as diabetes, blood pressure, asthma, etc. Only **3%** of HHs from project villages and **2%** from the control group said that some of their family members had suffered from communicable diseases such as Tuberculosis. Lack of proper mechanisms and limited awareness amongst the community towards proper methods of storing water and disposing waste are some of the underlying reasons behind such illnesses.

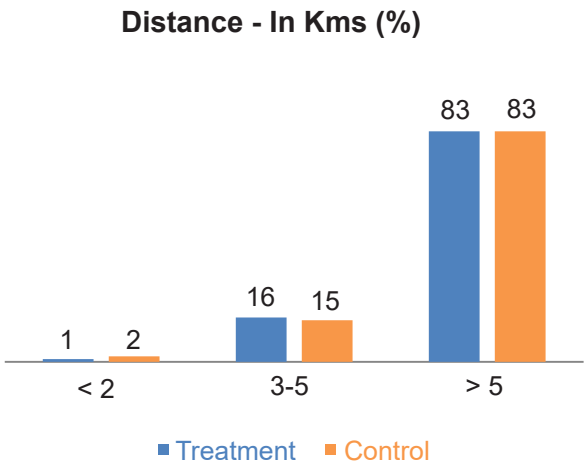
Group Discussion with Community Members, Keonjhar

17. https://matrujyoti.in/public/assets/images/NFHS-5_Odisha_Factsheet.pdf

Availability of Hospital and Distance to Healthcare Services

53% of HHs in project villages and in the control group were affirmative on the availability of hospitals. The HHs were further probed on the distance of hospitals from their homes, **83%** of HHs in project villages as well as in control group travel more than 5 kms. For **16%** of HHs in project villages and **15%** in the control group, the hospital is at 3-5 kms. Lastly, **1%** of HHs in project villages and **2%** in the control group travel less than 2 kms. Timely access of quality healthcare services, remains a challenge especially for people with disabilities, elderly, and pregnant women, due to limited reach of the public transportation system in the study areas and hospitals being available at more than 5 kms. Most HHs mentioned hospitals being available at distance of 20 km to 25 kms.

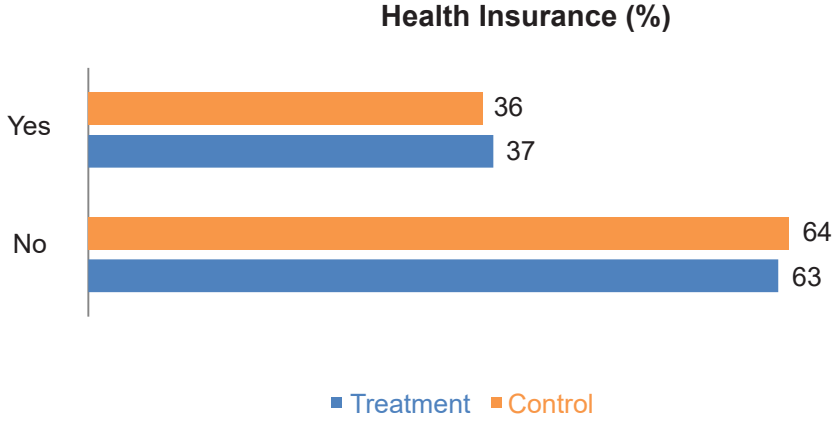




Health Insurance

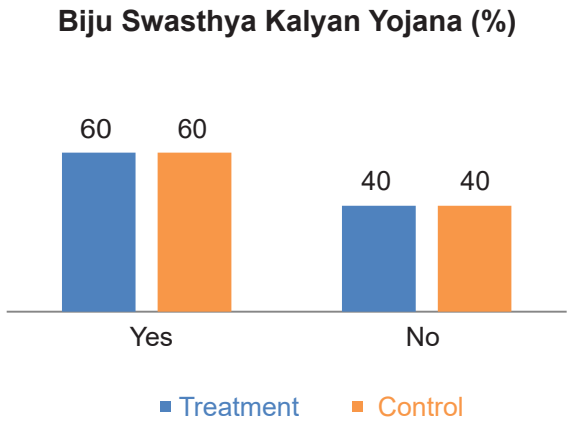
As shown in the chart, **37%** of HHs in the project villages and **36%** in the control group have health insurance while **63%** in the project villages and **64%** in the control group reported not having health insurance.

Out of **37%** HHs that had health insurance in the project villages, **96%** said it was through the government and **4%** mentioned having insurance through private companies. All HHs in the control group (**100%**) reported having government health insurance. Awareness camps regarding government health insurance schemes such as Ayushman Bharat Card and the steps on applying for the same should be conducted in the community for their enrolment in the scheme.



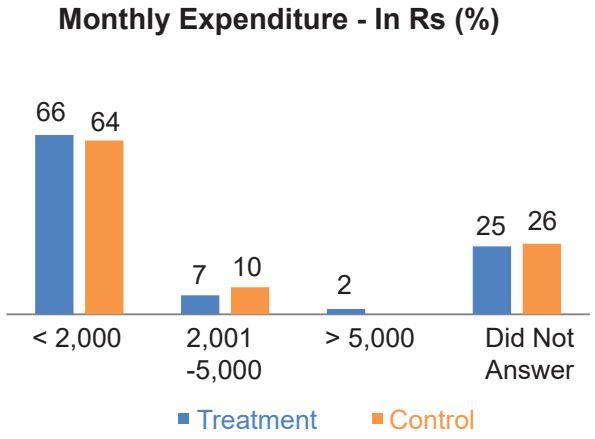
Access to Biju Swasthya Kalyan Yojana (BSKY)

The coverage of BSKY, a health scheme by the state government of Odisha stands at **60%** for project villages and the control group. The benefits of the scheme may be extended to families that are unaware of the scheme and as such are not availing the benefits. Those HHs that are availing the scheme, also mentioned not receiving any benefits inspite of registering from the same. The organisation may create awareness on the process of enrolling and different benefits associated wirth the scheme.



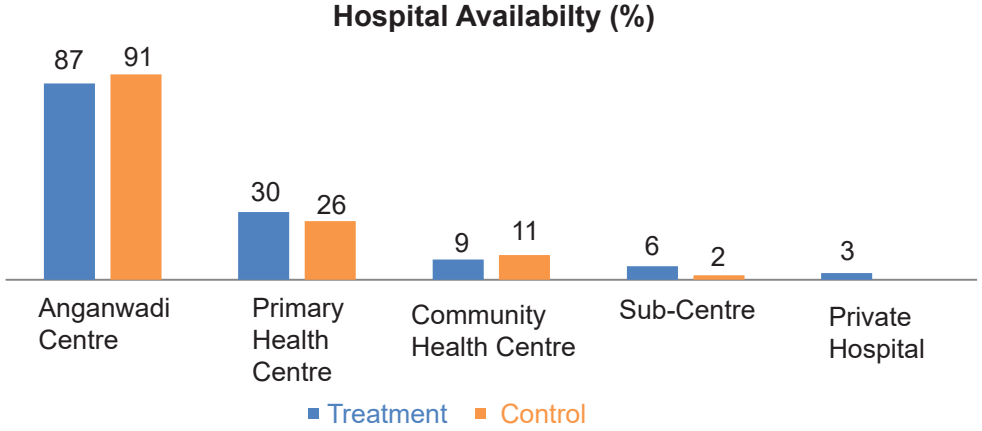
Average Monthly Expenditure on Healthcare

The average healthcare expenditure of HHs is Rs 2,000 for a family with 5 members. **66%** of HHs in project villages and **64%** in the control group spend less than Rs 2,000 monthly, **7%** of HHs in project villages and **10%** in the control group spend between Rs 2,001-5,000 and **2%** of HHs in project villages spend more than Rs 5,000 on healthcare. **25%** in project villages and **26%** in the control group did not know.



Availability of Healthcare Facilities

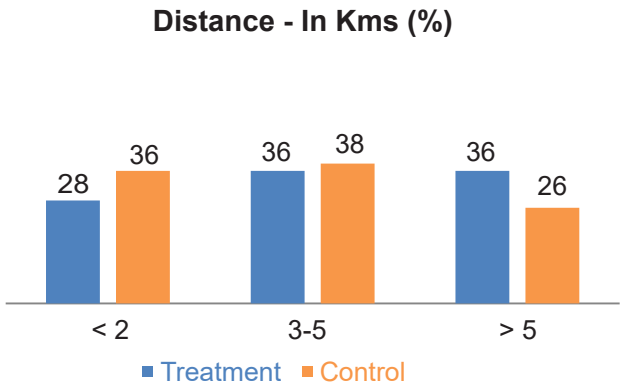
In terms of healthcare facilities available in the project villages, **87%** mentioned availability of an Anganwadi Centre (AWC), **30%** Primary Healthcare Centre (PHC), **9%** Community Health Centre (CHC), **6%** Sub-Centre and the remaining **3%** reported availability of private hospitals.



In the control group, **91%** of HHs mentioned availability of AWC, **26%** PHC, **11%** CHC, and **2%** mentioned Sub-Centre. For both project villages and the control group, HHs avail the benefits of government health services available at the grassroots level through the Anganwadi Centre. Village Health and Nutrition Days (VHND) are organised in Anganwadi Centres (AWCs) where women and adolescent girls are provided with Iron and Folic Acid (IFA) tablets along with awareness on tackling various health issues.

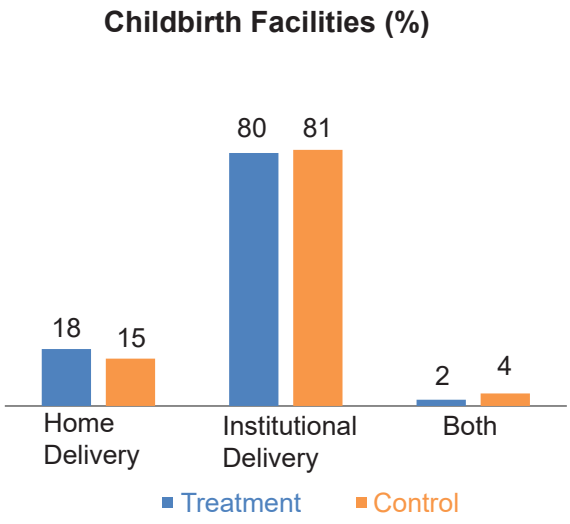
Distance of the Nearest Healthcare Facility

For **28%** of HHs in project villages and **36%** in the control group, distance to the nearest hospital is less than 2 kms, 3-5 kms for **36%** project villages and **38%** for the control group and more than 5 kms for **36%** project villages and **26%** of the control group. Proximity of the hospital to one's home becomes crucial for availing timely treatment in emergency cases and reduces the chances of risks.



Childbirth Facilities

The HHs were asked about existing childbirth methods in the community. In project villages **80%** mentioned institutional delivery, **18%** reported that children were born in homes and **2%** mentioned that institutional deliveries were not 100% and some mothers give birth at home while some at the hospital. In the control group, institutional delivery stood at **81%** and **15%** deliveries were done at home. **2%** of HHs in project villages and **4%** in the control group reported both. Increasing institutional deliveries, reduces the chances of newborn deaths and improves maternal health.



The organisation in collaboration with Accredited Social Health Activists (ASHAs) and Auxiliary Nurse Midwives (ANMs) of the community can mobilise the women and their families especially on Village Health and Nutrition Days (VHND). They can conduct outreach camps for households to undergo institutional deliveries, promote institutional delivery under the Janani Suraksha Yojana which provides cash transfers to women and ASHAs for institutional delivery and other schemes like Janani Shishu Suraksha Karyakaram (JSSK) for free institutional delivery in a public health facility.

Group Discussion, Keonjhar

Immunisation

When the respondents were queried on availability of immunisation facilities at the nearest hospital, **50%** of project villages and **58%** of control group were affirmative. However, **50%** of project villages and **48%** of the control group were negative. Insights received from the field revealed that people travel 7-8 kms to avail the facility of immunisation. Additionally, immunisation programs can be carried out in villages for door-to-door immunisation in collaboration with the local health department and Anganwadi Centre for better outreach and outcome.

Community Health Centre, Mayurbhanj

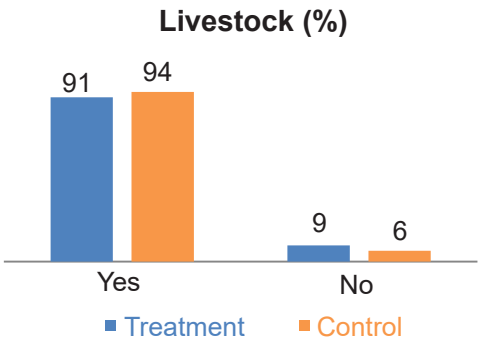
Livestock

Agriculture remains the main occupation of HHs. They are also involved in rearing animals for various purposes such as for consumption, farming, and sale of animals for extra income. Given that the region is heavily dependent on rainfall for agriculture, rearing animals provides families with instant cash in case of medical emergencies or any other contingencies.

Each household rears cows and buffaloes, mainly utilising the milk for personal consumption rather than selling it. Nearly **98%** of households raise goats and hens, selling them when financial requirements arise and the remaining **2%** rear them for personal consumption. Chickens serve as a valuable income stream and are often referred to as the "poor person's ATM," as they can be readily sold at short notice to address daily financial needs.

Availability of Livestock

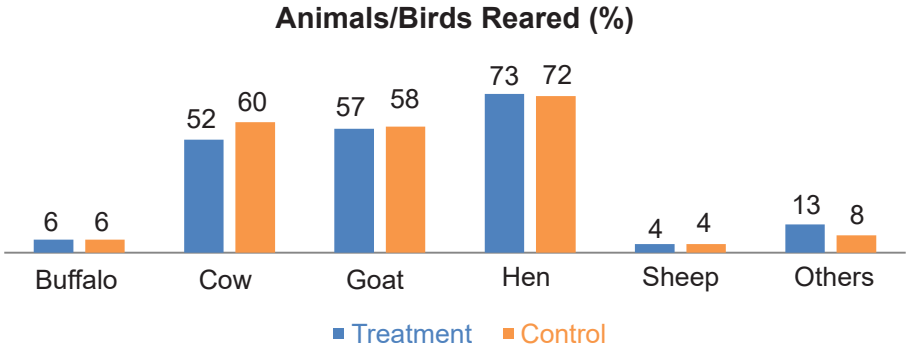
The availability of livestock was confirmed by **91%** of HHs in project villages and **94%** in the control group, while **9%** HHs of project villages and **6%** of the control group did not have any livestock available.



Types of Livestock Reared

The variety of livestock reared by HHs was also investigated. In the project villages **6%** of HHs rear buffaloes, **52%** cows, **57%** goats, **73%** hens, **4%** sheep and **13%** mentioned other animals such as pigs, ducks, and bulls.

In the control group, **6%** of HHs rear buffaloes, **60%** cows, **58%** goats, **72%** hens, **4%** sheep and the rest **8%** mentioned rearing other animals like pigs and bulls. On an average each of the HHs had 5-7 goats, 1-2 buffaloes and 2-3 cows and 10-15 hens.



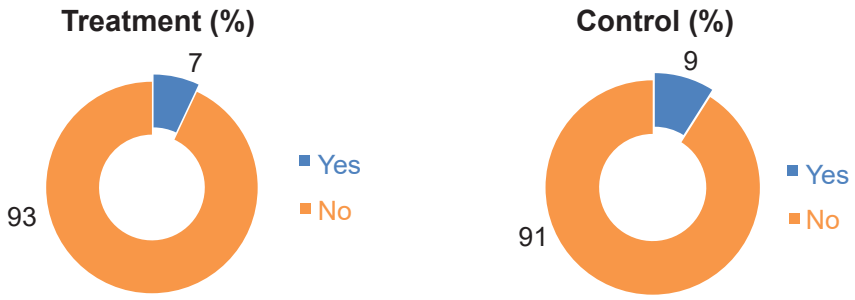
During interactions with the livestock department, it was highlighted that livestocks especially goat rearing, and poultry are being promoted by the district administration to increase the livelihood of households especially during non-growing seasons. The selected HHs are being provided with chicks and goats for rearing and one member from the community is being trained in providing para veterinary services for a small fee. Community members during the study requested that they should be provided with sheds to keep their livestock safe especially during summer and rainy seasons.

Animal Insurance

Odisha Livestock Resources Development Society (OLRDS) is implementing the National Livestock Mission to promote the component of risk management and insurance of the livestock. The scheme provides a protection mechanism to livestock owners against any eventual loss or death of their animals along with demonstration of benefits of the insurance of the livestock.

Livestock Officer, G.P. Nahabeda, Keonjhar mentioned that insurance amount for the cow is Rs 30,000, at a premium of Rs 180 per year. Goat insurance of Rs 6,000 is available at Rs 12 per goat annually. There is lack of awareness about animal loans amongst the HHs and the same can be provided by collaborating with rural banks and the livestock department by organising awareness sessions and holding meetings through SHGs in the community.

According to the graphs, **93%** of HHs in project village and **91%** in the control group are not aware of animal insurance. The awareness is only at **7%** and **9%** for project villages and the control group respectively. Further, only **2%** of HHs in project villages and **6%** in the control group mentioned that their livestock was insured.



It is evident that awareness on animal insurance and HHs that have ensured their livestock is low in both the groups. To increase awareness on benefits of animal insurance and make sure livestock owners insure their animals, community outreach should be strengthened. Regular workshops in collaboration with the livestock department should be held and group level meetings should be conducted for providing information and facilitating access to government insurance schemes.

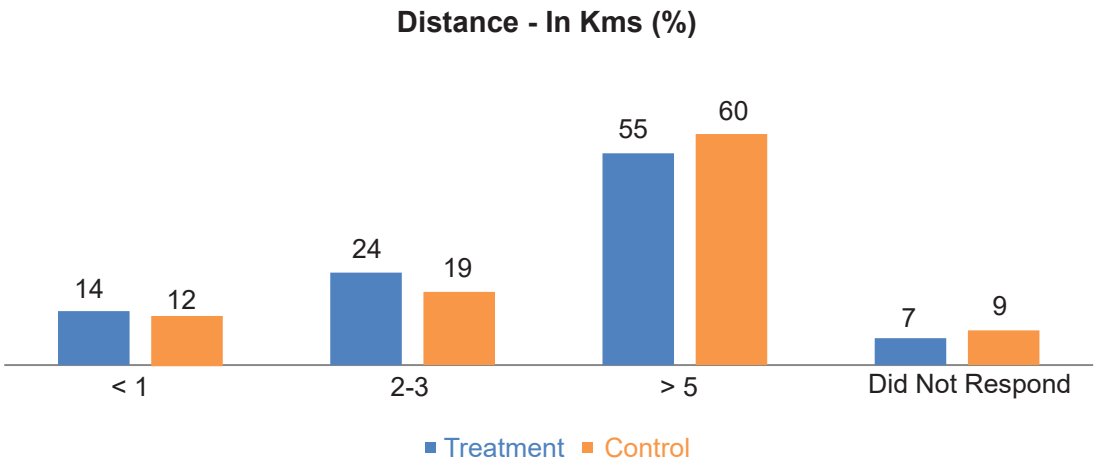

Livestock

Availability of Veterinary Services

HHs were asked if veterinary services were available - **47%** of HHs in project villages were affirmative while **53%** denied. In the control group, **49%** of HHs responded positively while for **51%** the service was not available. Availability of veterinary doctors is important from the perspective of their livelihood, as most of the HHs rear livestock and use them in agriculture. Any health issue in the cattle has a direct implication on their income and farming practices. The organisation can hold regular animal health camps in the community and can train women as Pashu Sakhis which will create village level entrepreneurs and take care of the para medical needs of cattle whenever required.

Distance Travelled to Avail Veterinary Services

HHs were asked regarding the distance at which the nearest veterinary services were available and in both the groups more than **50%** of the HHs, i.e. **55%** in project villages and **60%** in the control group mentioned - travelling more than 5 kms to avail the service. While **24%** HHs in project villages and **19%** in the control group said that within 2-3 kms they get veterinary services. **14%** of HHs in project villages and **12%** in the control group said that services are available within 1 km.



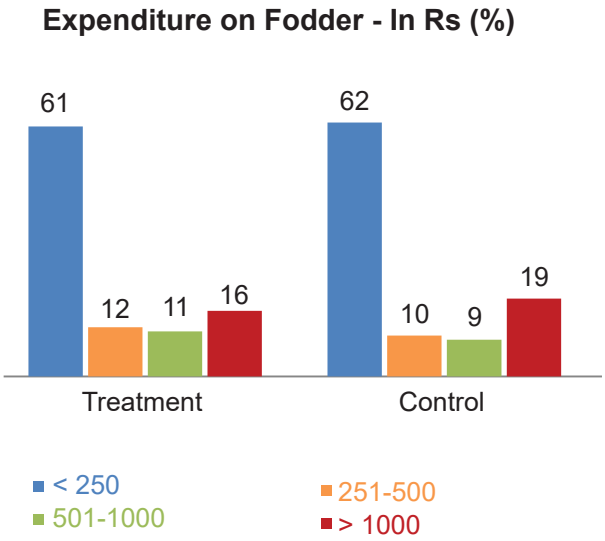
7% of HHs in project villages and **10%** of the control group were not aware of veterinary services. There is a need to provide and facilitate veterinary services to the community such as Mobile Veterinary Units (MVU) for doorstep service, along with organising animal health camps at regular intervals for maintaining health of the livestock and minimising the chances of their ill health or mortality. Data shows that more than **50%** of HHs travel more than 5 kms to reach the nearest veterinary services. In such circumstances, veterinary healthcare services should be available nearby to ensure timely treatment of the animal.

Expenditure on Livestock

The HHs undertaking livestock rearing also bear other varied expenses for the maintenance and good health of their livestock. The average number of livestock in each HH was a minimum of 2 cows and 4 goats. These animals require care and maintenance and some of the major expenses that HHs bear are on fodder, medicines, and treatment.

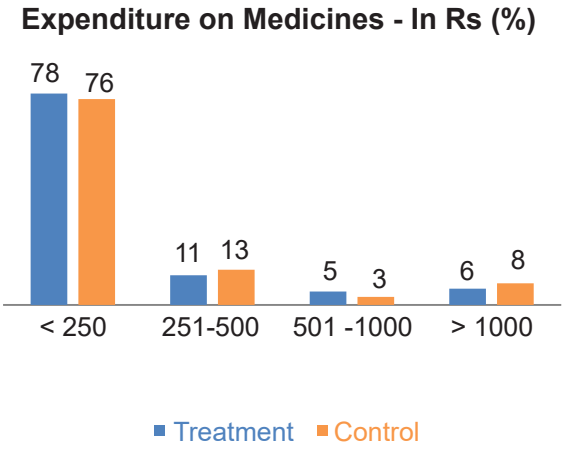
Monthly Expenditure on Fodder

61% of HHs in project villages and **62%** in the control group spend less than Rs 250 on fodder. Further, **16%** of HHs in project villages and **19%** in the control group spend more than Rs 1000. **12%** of HHs in project villages and **10%** in the control group spend between Rs 251-500 and **11%** of project villages and **9%** of the control group spend between Rs 501-1,000. HHs reported sending their cattle for grazing and using crop residue as fodder and hence the percentage share of spending less than Rs 250 is high amongst project villages and the control group.



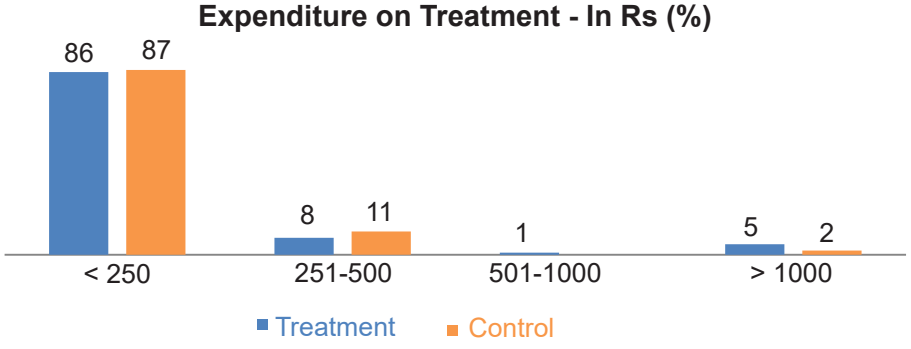
Monthly Expenditure on Medicines

78% of HHs in project villages and **76%** in the control group spend less than Rs 250 monthly on medicines, **11%** in project villages and **13%** in the control group reported a monthly expenditure of between Rs 251-500, followed by **6%** of HHs in project villages and **8%** in the control group spending more than Rs 1,000 monthly. **5%** of project villages and **3%** of the control group spend between Rs 501-1,000.



Monthly Expenditure on Treatment

Most HHs spend less than Rs 250 on the treatment of their livestock. In terms of representation, **86%** of HHs in project villages and **87%** in the control reported spending less than Rs 250. **8%** of HHs in project villages and **11%** in the control group spend between Rs 251-500, **5%** of HHs in project villages and **2%** in the control group spend more than Rs 1,000. **1%** of HHs in project villages reported spending between Rs 501-1,000 monthly on the treatment of their livestock.

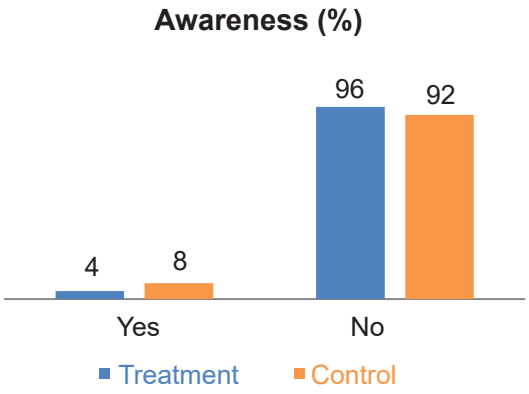


During discussions with the community members, most of them reported that a veterinary doctor was available on call, and they made visits once or twice a month. Although the government department provides services at nominal rates, in cases of an emergency, households spend from their pocket, with one injection costing as much as Rs 500 for a goat. The unavailability of government doctors on time forces them to be dependent on private practitioners.

HHs mentioned selling their cattle in the weekly market such as the Singda market in Mayurbhanj. **57%** of HHs in project villages mentioned that they do not sell their animals, while some also mentioned purchasing hens of 'fighting variety' which they use in cock-fighting tournaments. Further, as mentioned by beneficiaries during FGDs, HHs earn an average of Rs 5,000 per unit from selling goats, Rs 50,000 per unit from selling cows and Rs 300-400 per unit from selling hens.

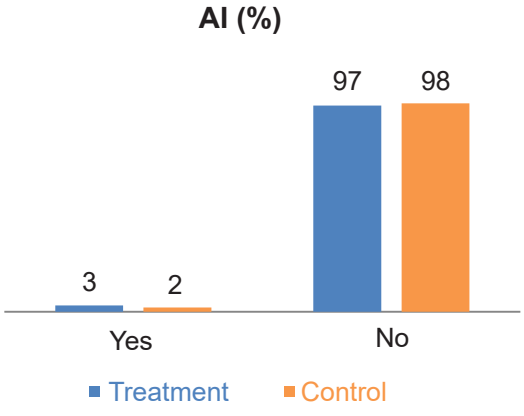
Awareness on Animal Loans

4% of HHs in project villages and **8%** in the control group were aware of animal loans - while **96%** of HHs in project villages and **92%** in the control group did not have any awareness on the same. The organisation can hold workshops and awareness camps in collaboration with the Animal Husbandry department, for the community and further link them with banks which provide animal loans.



Awareness on Artificial Insemination (AI)

In the project villages only **3%** of HHs were aware of Artificial Insemination (AI) while **97%** were unaware. While in the control group **98%** of HHs were unaware and only **2%** were aware of AI. The limited awareness on the AI, underscores the need to increase awareness regarding importance of AI in the community. The organisation should conduct camps and meetings in convergence with the Animal Husbandry department.

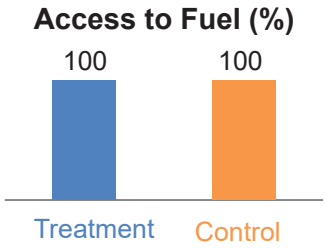


Income from Animals and Animal Products

On an average, the HHs during discussions reported selling chicken at Rs 400-600 and sheep for Rs 3,000-4,000. Goats, depending on the size are sold for an average price of Rs 7,000-8,000 for small goats and Rs 12,000 for larger goats. Bulls are sold in pairs for Rs 20,000 and cows for Rs 30,000-40,000. The HHs only sell livestock in case of an emergency and products such as milk etc. are mostly for self-consumption. Bulls are mostly used on the farm for land cultivation.

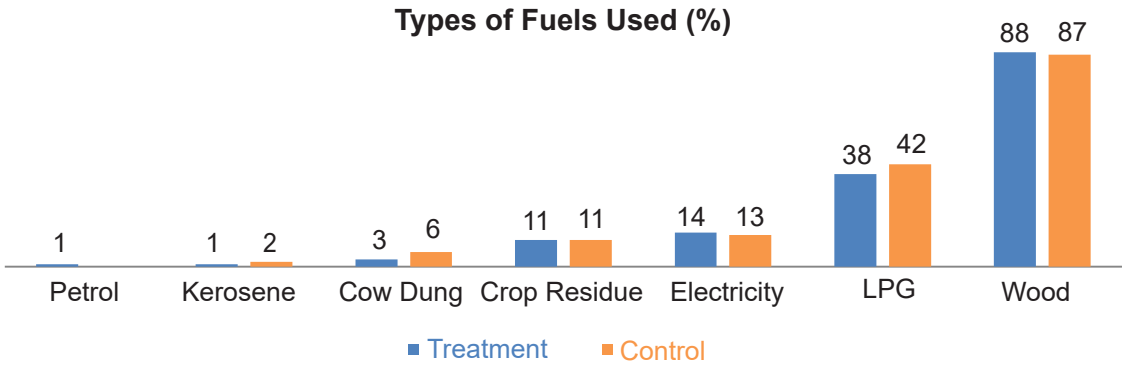
Fuel Consumption

All the HHs in project villages and the control group reported having access to more than one type of fuel.



Fuel Type

The graph represents the main fuels used by the HHs. **88%** of HHs in project villages and **87%** in the control group use wood. LPG is used by **38%** of HHs in project villages and **42%** in the control group. Electricity is used by **14%** of HHs in project villages and **13%** in the control group. Further, crop residue as a fuel is used by **11%** of the project villages and control group, **3%** of HHs in project villages and **6%** in the control group use cow dung. Kerosene and petrol are used by **1%** of project villages, while **2%** of HHs in the control group use kerosene.

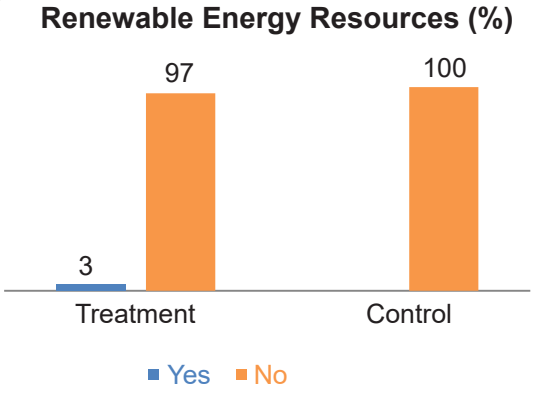


Overall, majority of the households reported using 'wood' in project villages and the control group. Despite the coverage of 'Pradhan Mantri Ujjwala Yojana' which aims to provide Liquified Petroleum Gas (LPG) cylinders to every household, wood is the most popular and economical fuel used by the community. Women travel to the jungle in the early hours of the morning to collect wood for fire.

During discussions, the HHs stated that despite owning LPG cylinders, they do not refill it due to the high cost and they mentioned that a subsidy is only provided to those who regularly fill their cylinder. Given the high cost of refiling gas cylinders, the HHs resort to wood for fulfilling their fuel needs. Some HHs reported using LPG only during rainy seasons when wood becomes moist, since it becomes difficult to use as a fuel.

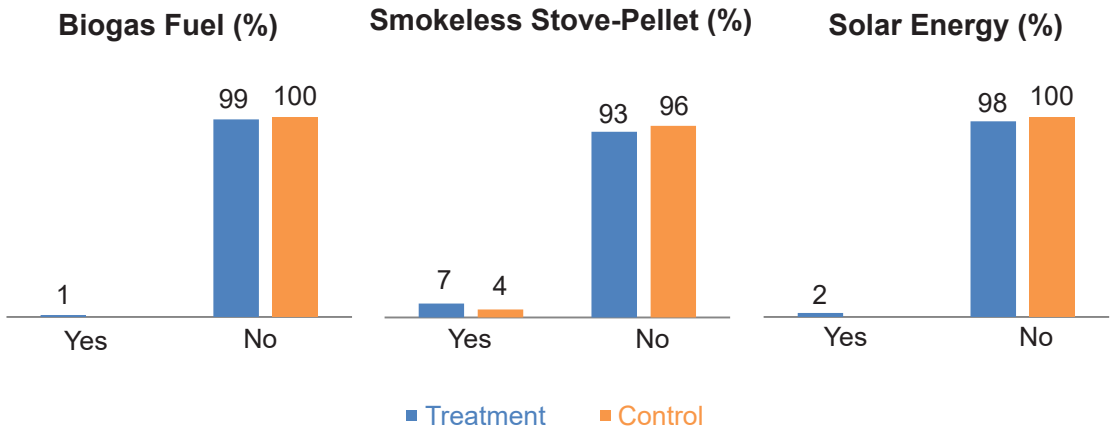
Access to Renewable Energy Sources

The graph shows access to renewable energy sources amongst the HHs in both project villages and the control group. **97%** of HHs in project villages and **100%** in the control group mentioned not having access to any such sources and only **3%** of HHs in project villages have access to them. Overall, the coverage of HHs having access to a renewable energy source was observed to be low.



Type of Renewable Energy Sources

Only **1%** of HHs in project villages reported using biogas fuel while none of them in the control group mentioned using the same. **7%** of HHs from project villages and **4%** from the control group reported using smokeless stoves. **2%** of HHs in project villages mentioned using solar energy while none of the HHs in the control group reported using the same.



Accessing renewable energy remains a challenge in rural areas. The organisation can collaborate with local government and the panchayat to make renewable energy sources available.

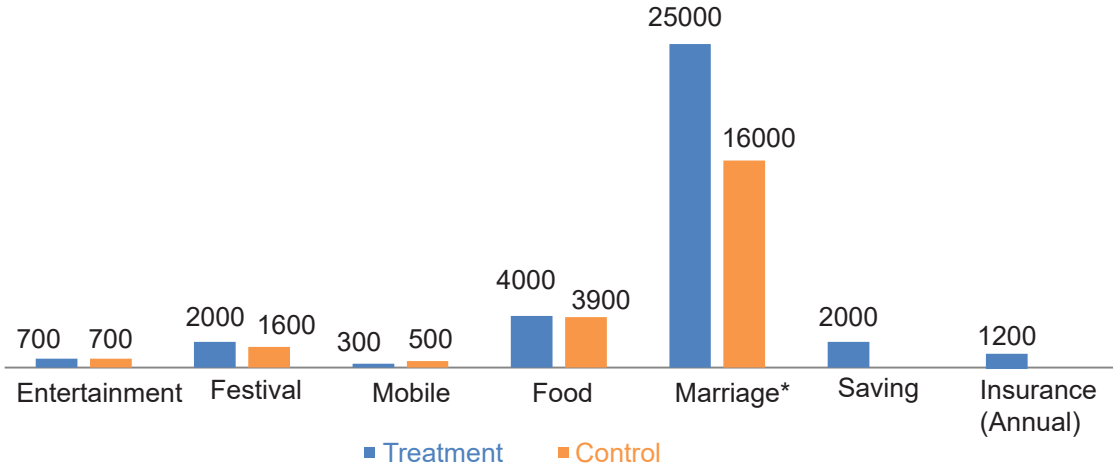
Installed Solar Water Pump in Community

Average Monthly Household Expenditure

The study mapped average monthly expenditure of the HHs on various expenses such as food, entertainment etc. The average monthly expenditure of project villages on entertainment is Rs 700, Rs 300 on mobile phones, Rs 4,000 on food, Rs 2,000 on savings and Rs 1,200 on insurance. While only **5%** of HHs spend on insurance, only 3 HHs provided details regarding the amount on insurance. The expense for festivals is Rs 2,000 and marriages is Rs 25,000 and these are onetime expenses.

In the control group, HHs responded to spending Rs 700 on entertainment, Rs 1,600 on festivals, Rs 500 on mobile phones, Rs 3,900 on food and Rs 16,000 on marriages. The selected villages have a high concentration of tribal population and their ritual festivals or 'parba' are occasions when families spend a lot of money which is most of their earnings . Some of the main festivals are Makar Sankranti, Jhariya Puja etc.

Average Household Monthly Expenditure (In Rs)



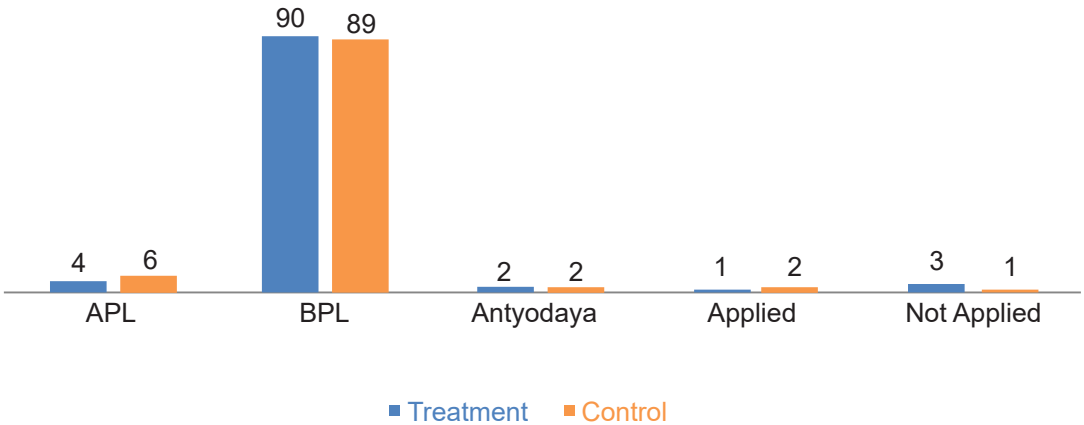
**Onetime expense*

Nutrition Component

Ration Card

90% of HHs in project villages and **89%** in the control group are Below the Poverty Line (BPL). **2%** of HHs in project villages and the control group are Antyodaya. These Antyodaya families are poorest of poor within BPL families. Under the National Food Security Act (NFSA), Antyodaya are provided with food grains at highly subsidised rates through their ration cards at any Fair Price Shop.[18] Further, **1%** of HHs in project villages and **2%** in the control group have applied for ration cards but have not received them yet. While **3%** of HHs in project villages and **2%** in the control group have not applied for ration card and lastly **4%** of HHs in project villages and **6%** in the control group fall in the category of Above the Poverty Line (APL).

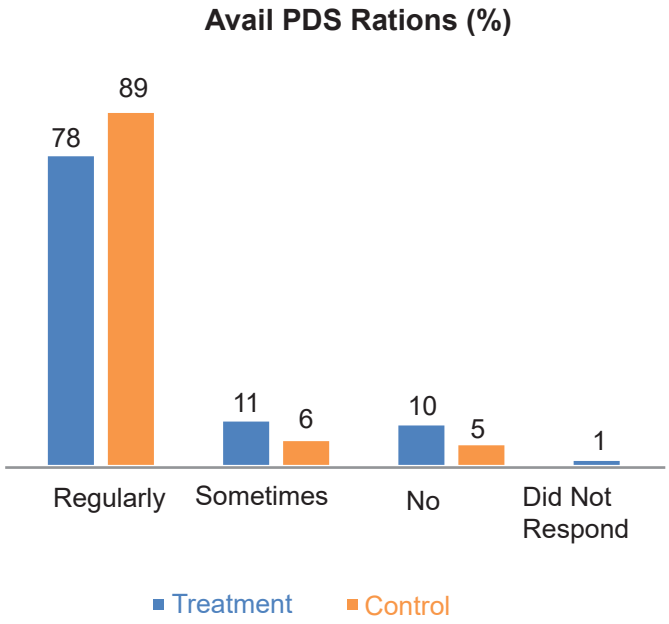
Ration Card (%)



18. https://dfpd.gov.in/impdsforportabilityofrcs.htm

Avail PDS Rations

On asking the HHs if they were availing rations through the Public Distribution System (PDS), **78%** of HHs in project villages and **89%** in the control group avail rations regularly, **11%** in project villages and **6%** in the control group reported availing it sometimes. **10%** of HHs in project villages and **5%** in the control group do not avail PDS rations. Further, **1%** of HHs in project villages did not have an answer. To increase the reach of PDS and mobilise community to avail rations regularly, awareness camps and meetings should be held periodically. Follow-up with the Panchayat and the administration should be done for families that are still to get their ration cards.



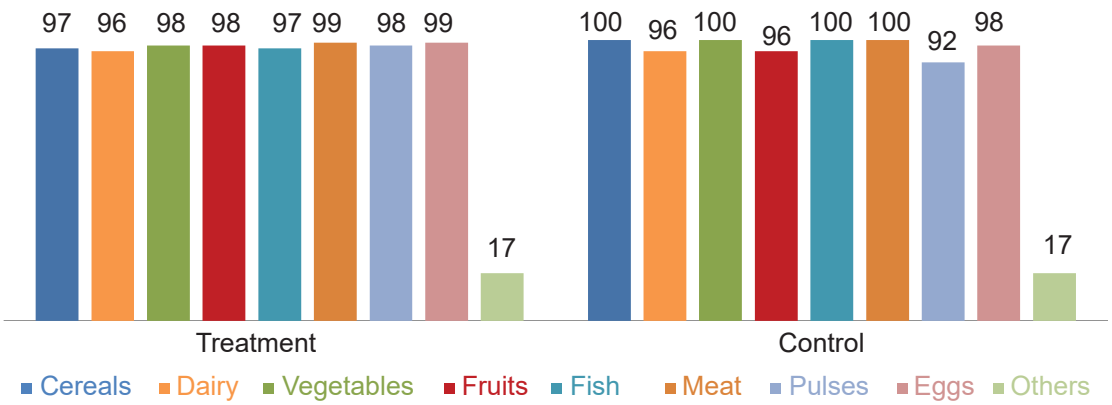
Group Discussion with Women Participants, Mayurbhanj

Food Items Consumed

The study tried to understand eating behaviours of the respondents. HHs were asked about different food items they consumed and the frequency of consumption. In project villages, **97%** of HHs consume cereals daily, **96%** consume dairy daily in some form such as milk, tea etc., **98%** consume vegetables daily, **98%** consume fruits daily, **97%** consume fish weekly, **99%** consume meat weekly, **98%** consume pulses daily, **99%** consume eggs daily, and **17%** did not have an answer.

On asking HHs in the control group, **100%** HHs mentioned consuming cereals daily, **96%** consume dairy daily, **100%** consume vegetables daily, **96%** consume fruits rarely, **100%** consume fish and meat weekly, **92%** consume pulses daily, **98%** consume eggs weekly and **17%** did not have an answer. Food products such as eggs, meat, cereals were most common amongst the households.

Food Items Consumed (%)



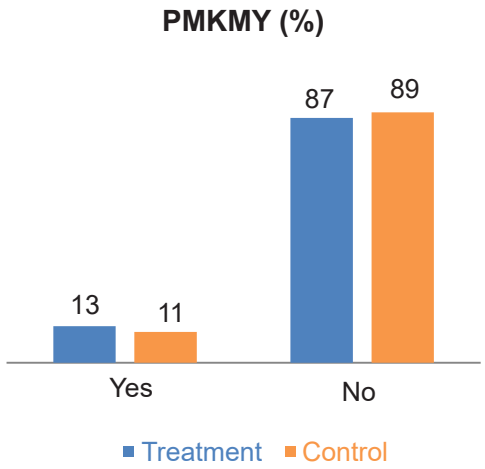
Accessibility to Government Schemes and Services

The table shows the availability and distance of various government institutions in the project villages.

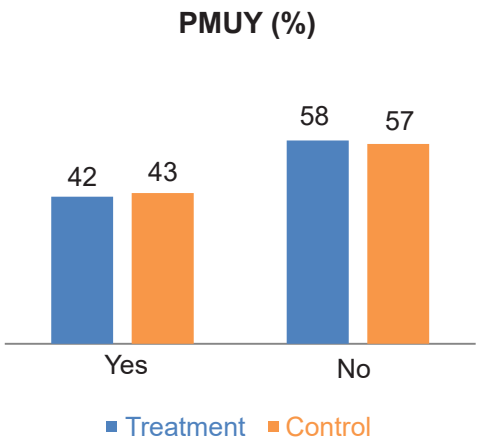
Institutions	Availability	Distance
Anganwadi	✓	Within 100 m
Primary School	✓	Within 300 m
Senior Secondary School	✗	>3 kms
Sub-Centre	✓	Within 400 m
PHC	✗	>3 kms
Block Hospital	✗	>4-15 kms
Bank	✗	>5 kms
Community Centre/ Temple Compound	✓	>5 kms
Veterinary Hospital	✗	2-10 kms

Pradhan Mantri Kisan Maandhan Yojana (PMKMY)

The scheme provides old age protection and security with an assured pension of Rs 3,000 monthly to small and marginal farmers. **13%** of HHs in project villages and **11%** in the control group avail the scheme. While **87%** of HHs in project villages and **89%** in the control group can be provided with information on the scheme and how they can apply to avail its benefits.



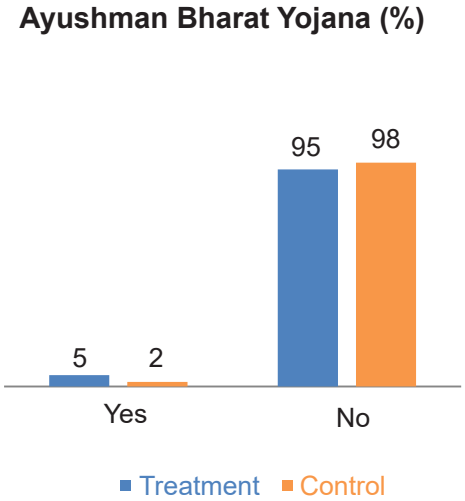
Pradhan Mantri Ujjawala Yojana (PMUY)



The scheme provides LPG cylinders to every household at a subsidised rate. **42%** in project villages and **43%** in the control group were availing the scheme while more than **50%** of HHs in both the groups were not. Most of the HHs do not refill their gas cylinders due to the high cost. Advocacy camps should be held in the community in collaboration with the Panchayat to further link the HHs with the scheme and ensure access to LPG cylinders.

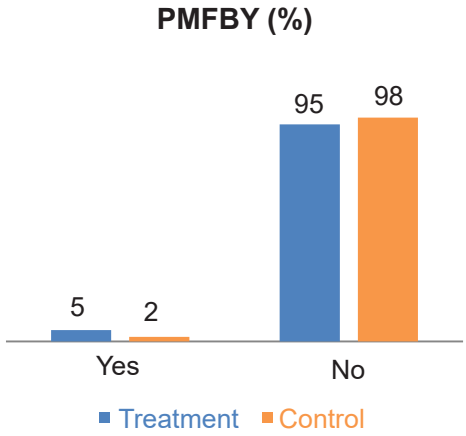
Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana

5% of HHs in project villages and **2%** in the control group affirmed having health cards issued under the Ayushman Bharat Yojana. However, more than **90%**, i.e., **95%** of HHs in project villages and **98%** in the control group denied availing the scheme. This highlights the limited reach of government health services in the region. The organisation should carry out campaigns with the district health department on creating awareness on the scheme and encourage people to apply for it.

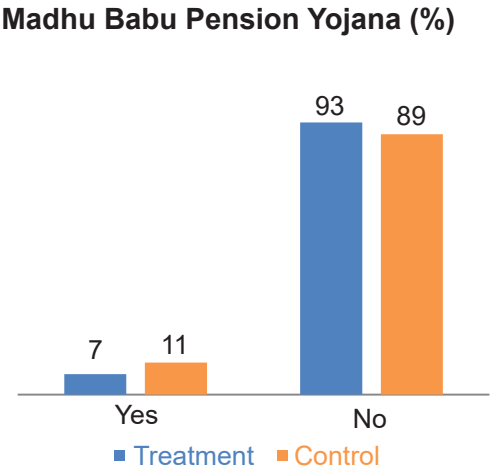


Pradhan Mantri Fasal Bima Yojana (PMFBY)

The overall coverage of Pradhan Mantri Fasal Bima Yojana is weak. Only **5%** of HHs in project villages and **2%** in the control group are availing the scheme while more than **90%** from both the groups denied accessing the same. There is a need to enrol HHs undertaking farming in the scheme and create awareness regarding the benefits such as insurance coverage and financial support, in the community for better outreach.



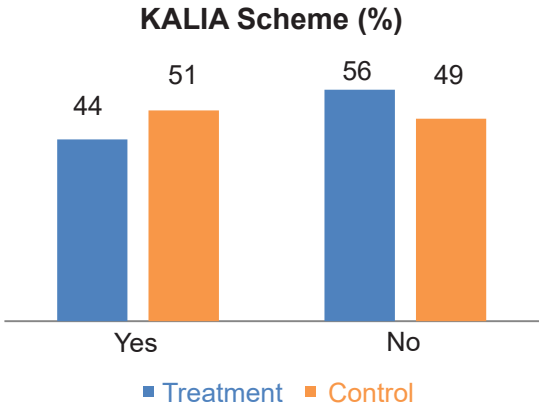
Madhu Babu Pension Yojana



The Odisha state government has initiated an old age pension scheme, 'Madhu Babu Pension Yojana', that also covers widows/widow of AIDS patients, leprosy patients and people with disabilities by providing them with cash transfer of Rs 500 (60-79 yrs.) and Rs 700 (80 yrs and above) per month through BDO in the gram panchayat office. Coverage of the scheme remains at **7%** for HHs in project villages and **11%** in the control group. **93%** of HHs in project villages and **89%** in the control group denied availing the scheme.

Krushak Assistance for Livelihood and Income Augmentation (KALIA) Scheme

KALIA, is a financial assistance scheme provided by the agriculture department. A farm family (small and marginal) is provided a sum of Rs 25,000 over 5 seasons to purchase seeds, fertilisers, or labour. The graph shows, that coverage of the KALIA scheme is more in the control group (**51%**) as compared to project villages (**44%**). HHs not availing the scheme remains high amongst project villages(**56%**) while **49%** of HHs in the control group denied availing the scheme. HHs also mentioned getting Rs 5,000 as the first instalment but later receiving only Rs 2,000 through DBT in their respective bank accounts. Disbursal of the amount is irregular with some receiving the cash benefit in 12 instalments while some HHs reported getting Rs 2500 as the first instalment.



Mukhyamantri Krushi Udyog Yojana

None of the HHs in either of the groups are availing the Mukhyamantri Krushi Udyog Yojana. The scheme aims to provide support to Agro-entrepreneurs for setting up commercial Agri-Enterprises thereby creating income and livelihood opportunities for the HHs.[19] One of the reasons for limited coverage of scheme can be attributed to lack of awareness about the scheme, or unwillingness of the families to start an agri-enterprise. Village-level meetings should be organised to create awareness on the scheme and ways the families can avail the benefits.

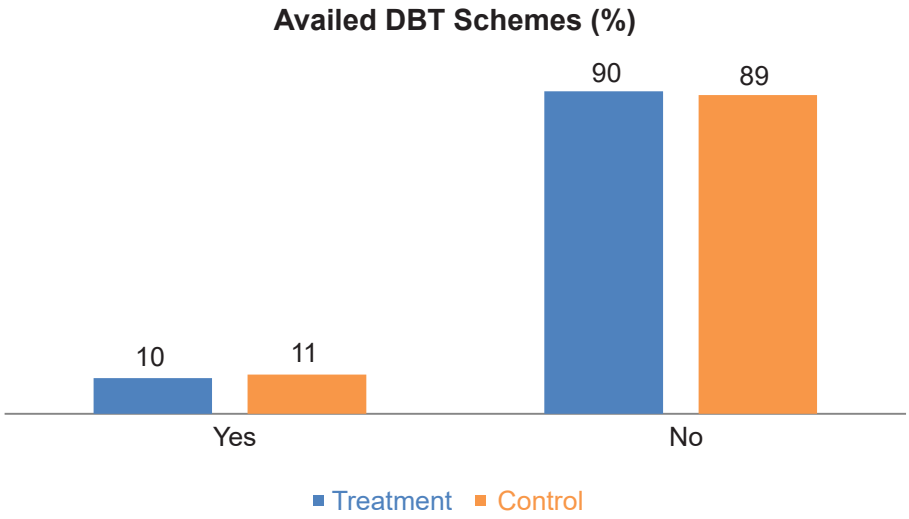
Watershed Development Schemes

In the project villages **4%** of HHs affirmed that they were aware of watershed development schemes while all HHs from the control group denied of being aware of the same. There is a need for robust engagement with the watershed department to create awareness regarding various benefits and schemes offered by the department such as farm pond creation and check dams. This can be done through group meetings, stakeholder meetings and awareness campaigns in the community for improved outreach of the scheme.

Subsidies or Direct Benefit Transfer (DBT) Schemes

The government provides various subsidies to households through Direct Benefit Transfer in the areas of healthcare (Biju Swasthya Kalyan Yojana), farming (KALIA), education (SC/ST scholarships), livelihood (MGNREGA), social security (LPG, PDS rations, old age pension, social assistance program) and housing (PMAY, Swachh Bharat) etc.

Only **10%** of HHs in project villages and **11%** in the control group were affirmative on availing DBT schemes. In discussions carried out with the community, HHs mentioned receiving benefits from several schemes such as old age pension, PDS, housing etc, but they were hesitant in reporting the same during the survey. On probing the HHs further, most of them mentioned receiving DBT for KALIA scheme while wages for MGNREGA were sometimes received in both cash and through DBTs. Overall, the HHs must be availing other DBT from schemes such as Swachh Bharat Mission (Grameen), PM KISAN, Atal Pension Yojana, Ujjwala Subsidy, MGNREGA etc.



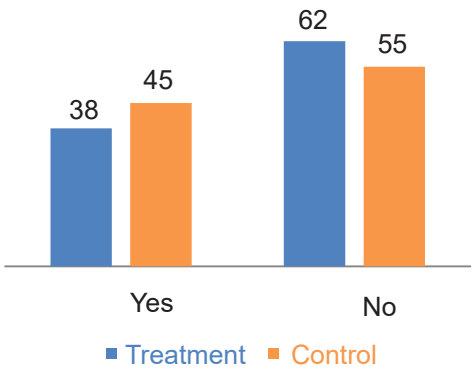
19. https://agri.odisha.gov.in/sites/default/files/2021-07/MKUY_PDF.pdf

Banking Facility

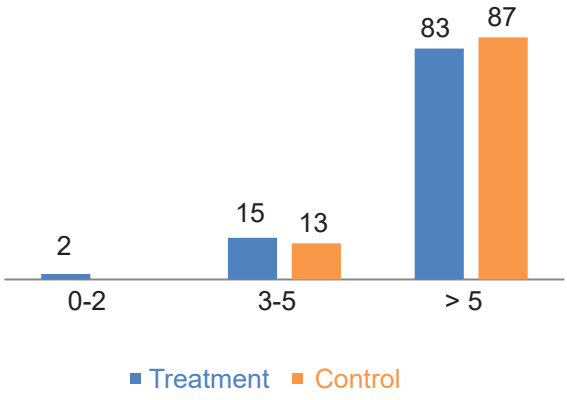
The graph represents availability of banks for the HHs and the distance to the nearest bank. The first graph shows that **38%** of HHs in project villages and **45%** in the control group affirmed that banking facility was available. However, more than **50%** of HHs in both the groups denied this.

Further, for **83%** of HHs in project villages and 87% in the control group, the nearest bank is at more than 5 kms, 3-5 kms for **15%** of project villages and **13%** of the control group. **2%** of HHs in project villages mentioned 0-2 kms. During discussions, most HHs mentioned having their accounts in State Bank of India (SBI) and Bank of India (BOI), which were at a distance of 8-10 kms.

Bank Availability (%)



Distance - In Kms (%)

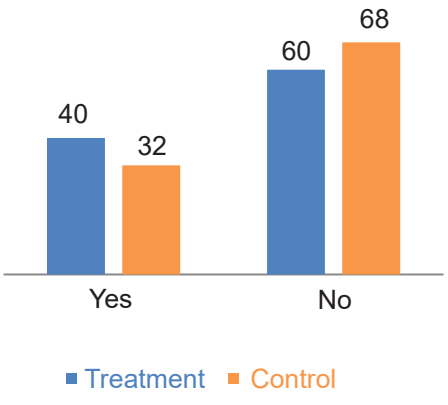


Community Centres

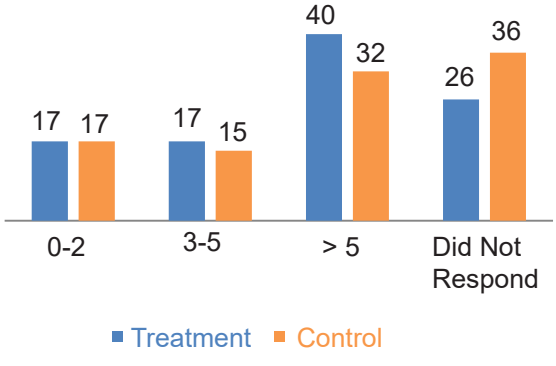
In the project villages, **60%** of HHs denied having a community centre in the village and **40%** mentioned it was available. **68%** of HHs in the control group did not have community centre in their villages, and **32%** confirmed the presence of a community centre. Further, in terms of distance of community centres in project villages, **17%** of HHs each mentioned distance at 0-2 kms and 3-5 kms respectively, **40%** mentioned more than 5 kms, and **26%** did not have an answer.

In the control group, **17%** of HHs have a community centre at 0-2 kms, **15%** at 3-5 kms, **32%** mentioned more than 5 kms and **36%** did not have an answer. During the FGD, women respondents mentioned the need for a community centre to conduct SHG meetings especially during summers and rainy seasons.

Access (%)



Distance - In Kms (%)



Recommendations

Through a collaborative effort, households will gain valuable insights into optimising their farming practices and improving their yields. In addition, these efforts will help better understand community's needs and concerns and ensure that the CSR programs are relevant and responsive. The baseline study recommendations are divided into 3 categories – Project, Communities and Organisation.

Initiatives

Agriculture

- The Government promotes millets such as ragi in Keonjhar and Mayurbhanj districts. The surveyor observed that very few people grow millets in the project areas, and it is primarily rainfed. The organisation may promote climate-resilient crops for cultivation due to its lower water requirement, and it also fetches a better price than paddy. Over the years, farmers are shifting from paddy to horticulture and livestock to increase their farm income. Agriculture improvement practices (SRI, DSR), FPO, and collective farming may be promoted in project villages to increase the crop yield, provide marketing support, and get a fair price.

- Keonjhar markets need to be regulated, cold storage and paddy processing units can avoid distressed paddy sales and reduce transportation expenditure. Jackfruit is found abundantly in Keonjhar and Mayurbhanj districts which can be promoted for value-added products such as chips, pickles etc. This may help the households in increasing their livelihood opportunities. In addition, the organisation may support agricultural inputs, vermicomposting and organise training for farmers to increase crop productivity in project villages.

- Vegetables (ladyfinger, brinjal, bitter gourd, chilly, tomato & lemon) and fruit cultivation (mango & banana) may be promoted by the organisation as it fetches a fair price margin for farmers. In addition, training on Goatry, Piggery, and Duckery (rearing, feed, shelter, and funding) will help increase households' overall farm-based income.

Livestock

- Project villages depend significantly on livestock for various aspects of life, including agriculture, livelihoods, and nutrition. Some of the key challenges include limited access to quality feed, inadequate veterinary services, and breeding practices. In addition, people need help accessing markets and getting fair product prices. The organisation can support by increasing market access and value chain integration, such as establishing market infrastructure, strengthening market linkages and training and capacity building.

- Veterinary services are remotely located. The organisation may identify and train some rural women on first aid, cattle feed, medicines, and treatment, as very few government Pashu Sakhis are available in the project area. In addition, the company may organise training sessions with the Animal Husbandry Department to provide local women with technical knowledge on feeding, breeding, and livestock management. These women can offer essential veterinary services in the villages on a chargeable basis.

- The organisation may create awareness regarding vaccination and disease control to prevent animal mortality. Measures such as adequate housing and ventilation (poultry shed), quality feed, animal health camps/fertility camps and timely veterinary care can enhance the overall health and well-being of the animals and improve the profitability.

- Jersey cow variety may be promoted in project villages with abundant animal resources, rising demand for dairy products and government schemes and support.

- **95%** of households need to be made aware of animal loans and insurance. The organisation may create awareness on insurance as this will help in risk management, financial protection, and access to capital for livestock farmers.

Water Resources

Most project areas experience water scarcity, particularly during dry seasons. Inadequate rainfall and depleting groundwater levels contribute to the shortage of drinking and irrigation water for agricultural purposes. Project villages need to improve irrigation facilities, especially in rain-fed areas. In addition, there needs to be better and proper irrigation infrastructure, including canals, tanks, and irrigation channels. It will enhance agricultural productivity and catalyse the ability of farmers to cultivate multiple crops throughout the year.

- The organisation may raise awareness about water conservation and management practices, efficient irrigation techniques, and the importance of maintaining clean water sources. Implementing water conservation techniques such as rainwater harvesting, watershed management, and promoting efficient irrigation practices like drip irrigation can help in conserving water resources and improving water availability.

- The organisation may promote adopting crop patterns and agricultural practices that are suitable for water-stressed conditions.

- It may promote groundwater recharge methods such as constructing check dams, percolation tanks, and farm ponds to recharge aquifers and increase groundwater availability.

Organisation

Education

- Literacy rate is lower amongst women than men, especially in Keonjhar district villages. Many students do not study after 5th grade; **60%** of girls drop out after the 5th grade. The organisation may conduct awareness sessions on women's literacy and motivate parents to educate their daughters. In addition, the organisation may provide skill training to youth, especially women, on tailoring, computer etc.

Healthcare

- Most of the households have toilets built under the government scheme but they are non-functional due to low pit depth, unavailability of water and other design issues. Most community members do not use the toilets. Only elderly, children and pregnant women use in case of an emergency. As a result, **97%** of HHs in project villages go for open defecation despite having toilet units at home, and only **3%** have functional toilets.

- The organisation may construct individual household toilets with the beneficiary and government contributions under the Swachh Bharat Scheme and address community challenges with the current structure. In addition, the organisation may promote behaviour change among community members to regularly use toilets and take ownership of repair if they become non-functional.

- Project villages have limited healthcare services, and advanced facilities are 25 kms away. Sub-Centres are available; however, they do not cater to the healthcare needs of community members. The organisation may provide a Mobile Health Van facility, so they only travel a little for crucial medicines and expert consultation.

Women Empowerment

- Women are an integral part of the project and actively participate in every activity. However, **80%** of women are illiterate in the project villages. Therefore, the organisation may provide functional literacy to these women to build their capacity and enhance SHGs' performance and quality of life.

- Women are part of SHGs and save Rs 50-200 every month and use the money for health, education and setting up shops. Some SHGs have taken loans from banks to buy agricultural inputs. The organisation may promote income generation activities such as jack fruit and tamarind value-added products and provide training on fish farming techniques. They can further be engaged in spice grinding, vermicomposting, soap making and tailoring activities which can help them in improving their skills and livelihood opportunities.

Infrastructure Development

- Availability of internet facility can keep people updated about weather forecasts, agriculture subsidies, government schemes and marketing opportunities.

Communities

Crop and Animal Loans

- There needs to be more awareness regarding animal and crop loans in project villages. The organisation may raise awareness that agricultural loans provide necessary financial support to meet agricultural needs. It will help farmers purchase seeds, fertilisers, pesticides, and other inputs required for cultivation. Crop loans will help farmers overcome the initial financial burden of farming activities.

- The organisation may help farmers access crop loans as it will enable them to invest in modern agricultural practices and improve farming techniques. This will increase crop productivity and farm income.

- There is no community focus on animal loans. However, the organisation may create awareness regarding animal loans to support individuals in acquiring or expanding their livestock. Animal loans can provide access to adequate training, veterinary, and market linkages support to ensure sustainable livestock-related activities. In addition, individuals can be made aware of responsible borrowing and proper loan repayment practices to avoid over-indebtedness and financial difficulties.

Local Governance and Convergence with Government Schemes

- Under Odisha Livelihoods Mission (OLM), the government has formed SHGs to reduce rural poverty by promoting gainful self-employment to the rural poor. In Keonjhar project villages, the Sarpanch has enabled Odisha Livelihoods Mission and revived SHGs formed by NGOs. However, no income generation activities have started in villages apart from inter-loaning. In most villages in Keonjhar, the Sarpanch and other elected members are not engaged in project planning and implementation and do not cooperate when required. For instance, the implementing partner mentioned that for irrigation projects in some villages, they directly reach out to beneficiaries, build their capacity, and take consent for civil work on their land. There is no role of the Sarpanch in the overall process. However, the organisation may build the capacity of Panchayati Raj Institutions (PRIs) and engage them in projects to bring credibility and enhance the overall development process.

- Overall, CSR projects may converge with government schemes to provide the HHs with various benefits such as subsidies and cash transfers through available schemes in agriculture, water such as KALIA or BALRAM schemes, Deen Dayal Upadhyaya Grameen Kaushal Yojana (DDUGKY) etc.

Local Forest Produce in Keonjhar

Annexures

Scope

The Baseline Assessment study covered Harichandanpur, Jhumpura blocks of Keonjhar district and Sukruli and Kusumi blocks of Mayurbhanj district. The organisation has a plan to implement the project from 2022 to 2026. It will cover a total of 39,000 households in these 4 years.

The baseline study covered the existing status of the prospective beneficiary households in each of the planned areas of intervention.

- Irrigation water availability/watershed development
- Sustainable agriculture practices for improvement in crop yield, thereby increasing income for communities'
- Local cropping system, avoiding water-intensive crops and reducing water and carbon footprint Animal healthcare services to reduce mortality rates
- Local community institutions
- Improved agriculture and livestock practices for better productivity through watershed development and improved methods

Household income was calculated adding all streams of income, including farm and non-farm based income. Expenditure incurred towards earning farm and non-farm income would be deducted and net disposable income would be derived (**Net Disposable Income = Gross Income – Cost**). The organisation's method mentioned in the RFP document was used to calculate the household income.

Non income based indicators such as land holding, irrigation facilities, type of house, water, fuel for cooking, benefits under govt. scheme, livestock, sanitation, SWM, PWDs, electricity, migration, consumption pattern, assets, financial literacy (bank account and awareness about financial products), participation in village level institutions, health-care facilities, food & nutrition, education, women participation in entrepreneurial and livelihood generation activities and value chains was covered in the baseline study. All the farm and non-farm-based indicators mentioned in the RFP document and after discussing with the organisation will be incorporated in the qualitative and quantitative questionnaires.

Qualitative data indicators – The research team covered community user groups, Natural Resource Management, Farm Based Livelihood, Non-farm based Livelihoods, and Entitlements data as per the RFP document in the study. Beneficiary income data, Control group income data and beneficiary details per the formats given in Annexure I was collected during the study.

Methodology and Sampling

The research team used exploratory research design and simple random sampling methods to understand existing challenges and possible solutions in project areas, gathered data from primary and secondary sources and measured quantitative indicators such as income, agriculture input costs, crop yield, expenditure patterns etc. In addition, the research team captured qualitative indicators such as cropping systems, irrigation facilities, livestock healthcare status, village-level institutions, government schemes availability, and community awareness about government schemes during the study.

The baseline assessment study was conducted in 8 villages of Mayurbhanj and Keonjhar districts of Odisha. Social, economic, and environmental indicators were covered to understand the present socio-economic situation in project villages. The total project beneficiaries are 39,000 households[20] in 2 blocks of Mayurbhanj and 2 blocks of Keonjhar. The team used a sample of 380 to collect data from the target population. It has a confidence level of 95% with a margin of error within ±5% of the surveyed value. The team undertook a total sample of 460 households for the baseline study. The proportionate sample represents both districts of Odisha. CESD undertook the detailed sampling after understanding the proximity of project villages, availability, and the engagement of primary and secondary stakeholders in the project.

CESD used a sample of 410 to collect data from the target population through door-to-door survey, focus group discussion, observation checklist and in-depth interview instruments. 50 non-beneficiary households from the surrounding villages were covered as the control group population, to compare the progress of the project villages in the subsequent years.

225 households in the Keonjhar district and 235 households in the Mayurbhanj district were part of the baseline study. This sample further cascaded proportionately into 2 Keonjhar blocks (Harichandanpur and Jhumpura) and 2 Mayurbhanj district blocks (Sukurli, Kusumi). The baseline study covered 25 non-beneficiary households each in Keonjhar and Mayurbhanj districts. The project villages are referred to as treatment group and non-beneficiaries as control group in the graphs throughout the baseline report. The study outcomes are mentioned below.

State	District	Block	HH	Sample
Odisha	**Keonjhar** (201 Project villages HHs) (25 HHs Control Group)	Harichandanpur Jhumpura	**103** **123**	50% qualitative (FGDs, Interviews etc.) and 50% quantitative data (survey) collection from HH Control group discussion/survey with 50 HH (With non-beneficiary households in surrounding villages)
	Mayurbhanj (206 HHs Project villages) (28 HHs Control Group)	Sukruli Kusumi	**105** **129**	
	Total Sample		**460**	

20. Data provided by ABF

The research team used instruments such as household surveys, focus group discussions, semi-structured interviews, and control group discussions to collect data and understand the existing socio-economic conditions of the target population.

The team undertook the detailed sampling after understanding the proximity of project villages, availability, and the engagement of primary and secondary stakeholders in the project. In addition, a preliminary discussion with the project team helped detail sample block and village-wise.

The key respondents/stakeholders for the study are people including both men and women (farmer and non-farmer), youth, elderly, KVKs, Agriculture, Irrigation, PHED, Animal Husbandry and other government departments, sarpanch, sachiv, teachers, ASHA, ANM, Anganwadi workers & organisation's representatives. The study ensures to capture the needs and perspectives of all beneficiary households and critical resource persons to enhance the project outcomes.

Draft questionnaires and study indicators were formulated as per the information in the RFP document and existing best practices. The research team shared draft questionnaires with ABF for approval.

Data Analysis and Report Writing

Data analysis started during the data collection process. The research team was responsible for reviewing and analysing the collected data, clarifying issues, and identifying gaps daily during the site visit. Data was organised and collated according to identified indicators, emerging themes, and patterns per the study objectives. The team used the online tool to collect and organise quality data daily. It efficiently captured qualitative and quantitative information and provides real-time information with analytics.

After the site visit, data was organised into defined indicators and converted into infographics, tables, and charts. The report highlights the socio-economic data of project beneficiaries, community needs, gaps in existing government services & delivery systems and identifying solutions for the existing community problems.

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