Impact Evaluation of iCARE Program

Indian Institute of Forest Management

Centre for Climate Change Studies and Geoinfomatics Centre for Forestry, Climate Change and Livelihood.

प्रगतेः मूलं प्रकृतिः

Table of Contents

List of Figures

List of Tables

Chapter 1

1.1 Introduction

Foundation for Ecological Security (FES) with the support of HCL grant has implemented an action program named "Informed Collective Action for Resilience of Ecosystem (iCARE)" with an integrated and evidence-based approach in six districts, spread over five states in India. The project aimed at improving local self-governing capacities and creating new Institutions at the village levels for the management of common resources (Land, water and forest).

The duration of the program was three years (2017-20), and consisted of different interventions to strengthen the social-ecological resilience by working on commons in an integrated approach. The impacts of such interventions have been evaluated using suitable indicators to identify the gaps, which can act as feedback to further enhance the efficiency of the program implementation. It is learnt that programs that appear potentially promising before implementation yet fail to generate expected impacts or benefits due to internal and external factors[1]. Thus, the impact evaluation of any action program should be measured to help policy makers/funders to fill the gaps in understanding what works, what does not, and how measured changes in well-being can be attributed to an intervention.

A result-based framework has been emphasized by many International agencies, especially in context to action projects related to building resilience and reducing vulnerabilities[2,3,4] for the monitoring and evaluation of the impacts and the outcomes. A result framework is an explicit articulation (graphic display, matrix, or summary) of the different levels, or chains, of results

---

[1] Khandker, S., & Koolwal, B. G., & Samad, H. (2009). Handbook on impact evaluation: quantitative methods and practices, 71-84.

[2] Kusek, J. Z., & Rist, R. C. (2004). Ten steps to a results-based monitoring and evaluation system: a handbook for development practitioners. World Bank Publications.

[3] UNDP, (2009). United Nations Development Programme. (2009). 'Handbook on Planning, Monitoring and Evaluating', pp. 1–232.

[4] Hobson, K., Mayne, R., & Hamilton, J. (2014). 'A step by step guide to Monitoring and Evaluation', Version-1, pp. 1–60.

expected from a particular intervention, project, program, or development strategy[5]. A result framework approach is both a planning and management tool that provides the basis for monitoring & evaluation, which provides a program-level framework for mangers to monitor the achievement of results and to adjust relevant programs and activities when necessary[6,7]. Thus, the current assessment of program impact of the iCARE interventions has been done using result framework comprising of process and outcomes of the various interventions. The current proposed framework has components of process with indicators that measure the extent of interventions for building social-ecological resilience. It also has indicators related to outcomes that lead to building sustainable institutions directly or indirectly by building Human, Natural, Social, Physical and Financial capital.

1.2 Conceptual Model of iCARE Program

The concept of the program has three key processes: collaboration at block level and district level for better planning and implementation, effective use of information and communication technology (ICT) and capacity building of the community and community institutions. These interventions seek to strengthen the social capital, human capital, natural capital, financial capital and physical capital, which are interlinked and together builds the socio-ecological resilience at the landscape level. The outcome / impact of various interventions is quantified as socio-ecological resilience index. The desired impact is primarily achieved through the effective utilization and channelizing different government funds (like MNREGA) in ecological restoration to create new livelihood opportunities, increased access to various social security schemes through increased awareness and community level institutional strengthening. The conceptual model of overall program from input, output and outcome is depicted in figure 1.

---

[5] World Bank, (2012). Designing a results framework for achieving results: A how-to guide. The World Bank, Washington, D.C.

[6] Görgens, M., & Kusek, J. Z. (2010). Making monitoring and evaluation systems work: A capacity development tool kit. The World Bank.

[7] Keith Mackay and others, (2009) 'Monitoring & Evaluation: Some Tools, Methods & Approaches', The World Bank.
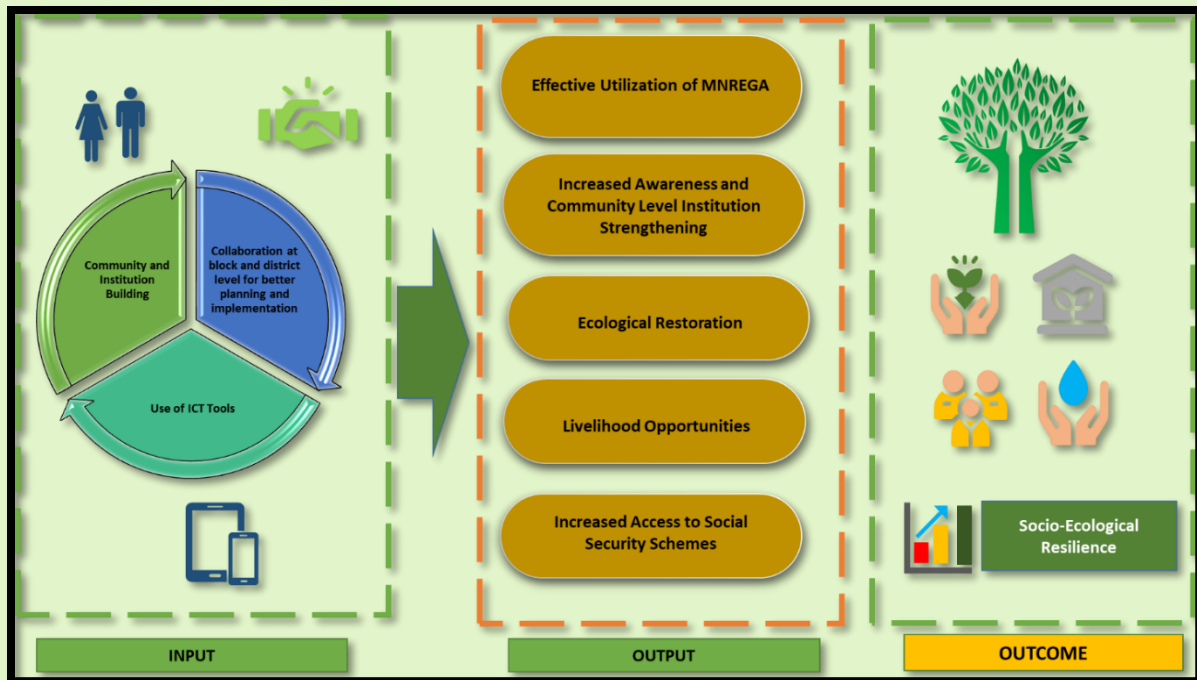
Figure 1 Conceptual Model of iCARE program

1.3   Objectives

The current assignment of impact evaluation of iCARE program implemented by FES is proposed with the following objectives.

> To conduct an end-term impact evaluation of iCARE program being implemented by FES (2017-2020).

> To assess the level of reach and absorption of the essence of the community-based interventions, and demonstrate the convergences at the beneficiary-levels.

> To analyse the data gathered; through primary analysis and relevant secondary literature.

> To document the performance of various interventions to serve as a guide for future activities.

1.4 Expected outcomes

The above objectives are expected to lead the following outcomes:

| Improved self-governing capacity and adoption of favourable policies and practices at the block level for management of forest, land and water resources. | Improved vegetative cover and biodiversity of forest and common lands. | Improved adoption of mobile based innovative tools and applications by rural communities for informed conservation planning, poverty alleviation and use of public funds. | Enhanced capacities of community institutions on collaborative planning, implementation and monitoring (PIM) of conservation action and utilisation of public funds at landscape level. |

1.5 Major activities of the project according to the logical framework

The major activities under the projects are provided in table 1 below.

Table 1 Major project activities according to the LOG-Frame of the Project

Sr. No.	Activities	Performance indicators
1	Improved self-governing capacity and adoption of favourable policies and practices in 600 habitations for management of forest, land and water resources.	70% habitations have robust institutional arrangements with 6 multi-actor platforms.

2	Improved adoption of mobile based tools and applications by rural communities for conservation planning, poverty alleviation and use of public funds.	400 community institutions and 20 partners integrate tools and application in conservation planning, implementation and monitoring. 80% of households have access to social security programs.
3	Enhanced capacities of community institutions, NGOs and GOs on collaborative planning, implementation and monitoring (PIM) of conservation action and utilisation of public funds at landscape level.	Target to achieve 400 community level and 6 landscape level conservation action plan implemented by leveraging approx. 12.28 crores public funds.
4	Adoption of complementary strategies of community mobilization, conservation PIM tools and administrative arrangements imperative for collaborative action.	State level integrate project strategies in conservation efforts.

(Source- HCL Foundation and FES)

1.6 Expected results over the project implementation period

The planned activities under the current project targets to strengthen decentralized institutional arrangements and stewardship at landscape level (village and inter village) for resilient ecosystems, especially focusing on improved governance of shared natural resources-land, water and forests (herein after referred to as Commons) and reach out to more than 600 rural

communities and 45,000 households across 6 blocks/landscapes. The project by strengthening decentralized institutional arrangements at village and landscape level, and channelizing public funds for restoration of degraded habitats and will assist communities in managing natural resources by building on their existing norms, enabling spaces for women and the marginalized, mapping and inventorying their resources, claiming rights over land and produce, and surfacing attendant duties and responsibilities. In each selected block/landscape, the project has targeted an additional 100 habitations in a contiguous manner defined by a range of hills, rivulet or adjoining forest sanctuaries and protected forests to leverage the social-cultural-ecological potential of the area. It would strategically build on this robust community base and leadership for scaling up to all the villages in the landscape. It is leveraging the potential of mobile technologies and spatial information systems to improve planning and management in conservation action planning for regeneration of habitats, conserving biodiversity, groundwater recharge and influence public investments for natural resources. It equips communities with innovative tools and methods (such as games derived from game theory, community based system dynamics, biomass and crop water budgeting etc.) to trigger discussions on sustainable harvesting levels and bring in long term behavioural change for judicious use of natural resources. Multi-actor platforms at block level of village communities, civil society organizations, government departments and academia will engage together and act on judicious land and water use planning and channelizing of public funds paving way for designing frameworks for a sub district level institutional design and architecture. The project also demonstrates strength of local communities to collaborate and deploy local knowledge to cost effectively manage complex environmental problems. The project also targets to form community institutions in 600 habitations. More than 60% of the habitations are targeted to develop robust institutions to protect and sustainably harvest forest products. 20,000 hectares of forest and non-forest common land is also targeted to be brought under protection which will lead to 20% increase in carbon storage. Other benefits of the project include reduction in income volatility, higher levels of community coherence and inclusion, improved biodiversity conservation, and potential adoption of lessons from the project by other partners. By rigorously tracking program implementation and outcomes through a social-ecological systems framework, the project will

generate fundamental lessons for sustainable forest management, water conservation and climate action that will be leveraged for adoption in new areas and regions. The impacts of the planned activities are measured on the program- process and program outcomes through a result-framework.

Chapter 2

2.1 Methodology

Impact evaluation is intended to determine more broadly whether the program had the desired effects on individuals, households, and institutions and whether those effects are attributable to the program intervention. Impact evaluations can also explore unintended consequences, whether positive or negative, on beneficiaries[8]. It assesses the extent to which a program has caused desired changes in the intended audience. It is concerned with the net impact of an intervention on households and institutions, attributable only and exclusively to that intervention. Thus, impact evaluation consists of assessing outcomes and, thus, the short or medium-term developmental change resulting from an intervention[9]. Many scholars and researchers have suggested to measure the project impact using composite indicators and result framework[4,6,10,11]. The indicators are grouped under program process and program outcomes. A multistage sampling strategy, which uses purposive sampling for choosing case villages and counterfactual (control) villages. While, quota sampling is used in the next stage to capture the

---

[8] Baker, J. L. (2000). Evaluating the impact of development projects on poverty: A handbook for practitioners. World Bank Publications.

[9] Kene Ezemenari, Anders Rudqvist, K. Subbarao Impact Evaluation: A Note on Concepts and Methods: Poverty Reduction and Economic Management Network, The World Bank: REVISED DRAFT.(01/11/99)https://www.researchgate.net/profile/KeneEzemenari/publication/237256416_Impact_Evaluation_A_Note_on_Concepts_and_Methods/links/5481fbd80cf25dbd59ea1108/Impact-Evaluation-A-Note-on-Concepts-and-Methods.pdf

[10] Riikka Rajalahti Johannes Woelcke, Pehu, E. (2005). Monitoring and Evaluation for World Bank Agricultural Research and Extension Projects: A Good Practice Note

[11] Hammill, A., Dekens, J., Leiter, T., Olivier, J., Klockemann, L., Stock, E., & Gläser, A. (2014). Repository of Adaptation Indicators: real case examples from national Monitoring and Evaluation Systems.

program impact for each objective of the expected program outcomes. The detailed research methodology is represented in figure 2.
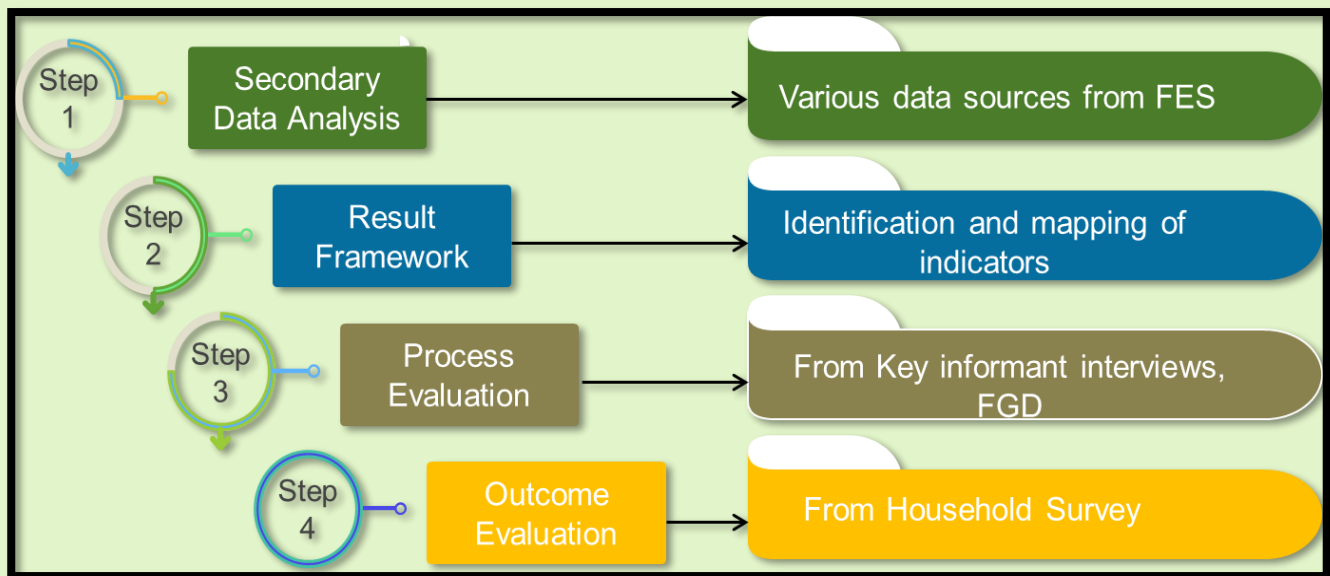
Figure 2 Detailed research process flowchart

Based on the shared data and information from FES and HCL Foundation, a list of indicators that are quantifiable are grouped under process and outcome sections of the result framework. Twenty-seven indicators are identified through secondary data analysis that were shared by the implementing agency on planned activities, set targets and achieved targets (Annexure 1). Out of these twenty-seven indicators, fourteen indicators are identified to measure the program process and thirteen indicators for measuring the program outcomes. The intended impacts of the interventions are measured using pre-post and case-control research design through quantitative and qualitative assessment of the thirteen outcome indicators (Figure 3). The process indicators are computed as percentage of target achieved versus the targets planned. It is assumed that the targets were planned in the contextual setting of the socio-ecological system of the various project sites. The outcome indicators were assessed using the double difference method, involving pre-post and case-control research design.

Agency Objective
Increasing Socio-Ecological Resilience of Rural Community of 6 Blocks of 5 Indian States through iCARE Program

Strategic Objective
Measuring Socio-Ecological Resilience at habitation level through End term Impact Evaluation of iCARE Program in 5 Indian States

Process Indicators

Outcome Indicators

Collaborative Action for Planning and Implementation
- No of Workshops with block officials
- No of Workshops involving multiple actors
- No of Government, officials trained
- No of NGO officials trained
- No of Habitations surveyed
- No of Habitations organized (VI formed)
- No of federations/MAP crafted at landscape level

Capacities of communities and community-based institutions
- No of Gram Panchayat members trained
- No of campaigns organized
- No of Village Institution, Committee Members, other community members trained
- No of CRPs and volunteers trained to undertake large scale capacity building programs
- No of habitation conservation plans developed
- No of CRP recruited

ICT Penetration
- No of village institutions accessing tools

Ecological Restoration
- No of habitation conservation plans developed
- Commons brought under community conservation (in ha)
- Representative sites selected for ecological monitoring
- No of conservation plots selected for ecological monitoring

Better Governance
- Amount of MNREGA funds leveraged
- No of HH having access to Social Security schemes
- No of HH benefitting indirectly
- Increase in no of MGNREGA days

Better livelihood opportunities
- Increase in the number of cattle/livestock
- Increase in MGNREGA Income
- Increase in the water availability (No.of months)
- Increase in total household Income
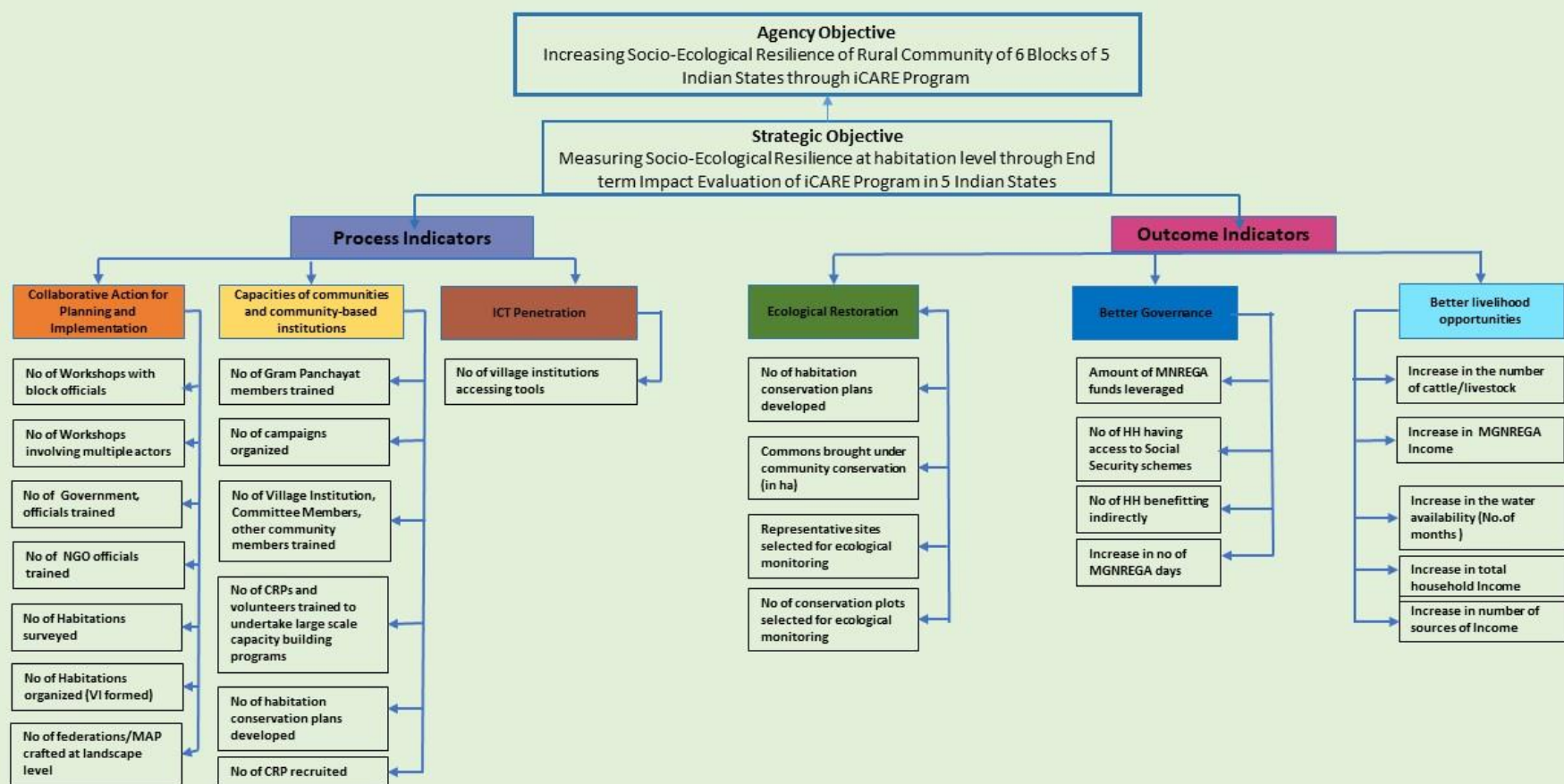- Increase in number of sources of Income

Figure 3 The Result Framework with the Process and the Outcome Indicators.

2.2 Data Collection and Data Analysis

The data collection includes methods like the Key Informant Interviews (KII), Focused Group Discussions (FGD) and Household Surveys to capture the impacts of various interventions in the project villages. For household surveys, online data collection platform KOBO toolbox is used. The data analysis is done using appropriate statistical tools (Paired t-Tests and others) to assess the process and outcomes of the project interventions.

2.3 Pilot Study

A pilot filed visit was organized and conducted in Kadana block in the month of December 2021. During this field visit various tools like the household questionnaire, KII and FGD formats were tested in the project villages. During this pilot survey, an assessment of recordkeeping, usage of ICT tools, various resource maps and other on-ground interventions were carried out. Based on the assessment, it can be inferred that the financial grant is solely utilized in creating human and social capital for building socio-ecological resilience at the village level. The collaboration with government officials at block and district levels has contributed to an effective planning and implementation of the program. This in turn, has led to an enabling atmosphere for ecological restoration of commons the village institutions.

2.4 Methodology for Computation of Socio-Ecological Resilience

The data on the selected indicators were collected from the field visits and household survey of the beneficiaries. The indicators related to process were computed on target achievement and were normalized. In a positive relationship (Equation 1), the value of vulnerability increases with increase in the value of the indicator and in a negative relationship (Equation 2), the value of vulnerability increase with a decrease in value of indicators.

$$Index_{sv} = \frac{S_v - S_{min}}{S_{max} - S_{min}} \qquad \text{------(1)}$$

$$Index_{sv} = \frac{S_{max} - S_v}{S_{max} - S_{min}} \qquad \text{------(2)}$$

Where,

S_v is the average value of indicator

S_{min} and S_{max} are the minimum and maximum values of the indicator

The composite vulnerability index was computed using the formula in (Equation 3). $Index_i$ normalized represents indicators of the result framework.

$$Socio - Ecological\ Resilience = \frac{\sum_{i=1}^{n} Index_i}{n} \text{-----(3)}$$

2.5 Methodology of Impact Measurement Using Double Difference

Monitoring and evaluation are at the heart of evidence-based policymaking[12]. Globally, there has been a shift from measuring input to measuring outcomes and results. Such a shift in monitoring and evaluation framework is not only confined to set and track national and international targets, but are also useful for the program managers/funders to enhance accountability, inform budget allocations, and guide policy decisions. It further provides a core set of tools that stakeholders can use to verify and measure the extent to which the program or policy has delivered targeted results. There are many methods for program impact evaluation. Popular methodologies include qualitative assessments methods, the theory of change with adaptation specific indicators[13]. Recent research emphasizes on the use of quantitative indicators and repeated measurement approach for program impact evaluation. This is due to focus on result based measurement of program implementation and their outcomes[14]. Conventional techniques include before and after study design where data is collected on the beneficiaries of a program before and after the intervention. However, since many other factors also influence the difference, another design is adopted where a counterfactual is also studied simultaneously who is non-beneficiary of the

---

[12]White, Howard. (2006). Impact Evaluation: The Experience of the Independent Evaluation Group of the World Bank. University Library of Munich, Germany, MPRA Paper.
[13]Price-Kelly, H., Hammill, A., Dekens, J., Leiter, T., & Olivier, J. (2016). Developing national adaptation monitoring and evaluation systems: a guidebook.
[14] Riikka Rajalahti,Johannes Woelcke and Pehu, E. (2005). Monitoring and Evaluation for World Bank Agricultural Research and Extension Projects: A Good Practice Note.

scheme[15]. The difference in the state of adaptation action under study is the program impact. As a result, recent research proposes the use of difference in difference method (DD), in project indicators where both before-after and case-counterfactual (control) values are computed and differenced[1,4,16,1718]. In a DD model, the relevant comparison is changes in the indicator over time. Thus, the comparison in a DD model is between the trends in the control group from before and after the project versus the trends in the treatment group. The double difference then refers to the difference over time (the first difference) and the difference between the control and treatment (the second difference). If the trends are significantly greater for the treatment group (in a statistical sense), this suggests that the project had an impact. Thus, the DD estimator combines cross-sectional and over-time variation to correct for differences between groups when treated and controls do not necessarily start from the same level.

Mathematically, given a two-period setting where t = 0 (Baseline) before the program and t = 1(End-line) after program implementation, $P2_1^T$ and $S2_1^C$ represent the respective outcomes for a program beneficiary (case/treatment group) and non-program beneficiary (control group) in end-line, $P1_0^T$ and $S1_0^C$ are the respective outcomes for a program beneficiary and non-program beneficiary in the baseline. The DD method will estimate the average program impact as follows:

$$DD = \left(\left|P2_1^T - P1_0^T\right|\right) - \left(\left|S2_1^C - S1_0^C\right|\right). \qquad \text{-------} \qquad (4)$$

The DD method is further illustrated in figure 4 where P1 and P2 are the baseline and post-intervention data for the case group. The S1 and S2 are the baseline and post-intervention data for the control group. In this case, there is a general trend of increase, but the treatment group shows an increase which is the general time trend (represented by Q) plus the project impact.

[15]Khandker, S., & Koolwal, B. G., & Samad, H. (2009). Handbook on impact evaluation: quantitative methods and practices, 71-84.

[16]Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., & Vermeersch, C. M. (2016). Impact evaluation in practice. World Bank Publications.

[17] Kusek, J. Z., & Rist, R. C. (2004). Ten steps to a results-based monitoring and evaluation system: a handbook for development practitioners. World Bank Publications.

[18] UNICEF. (2003). Understanding Results Based Programme Planning and Management Tools to Reinforce Good Programming Practice. Evaluation Office and Division of Policy and Planning, UNICEF, 26.
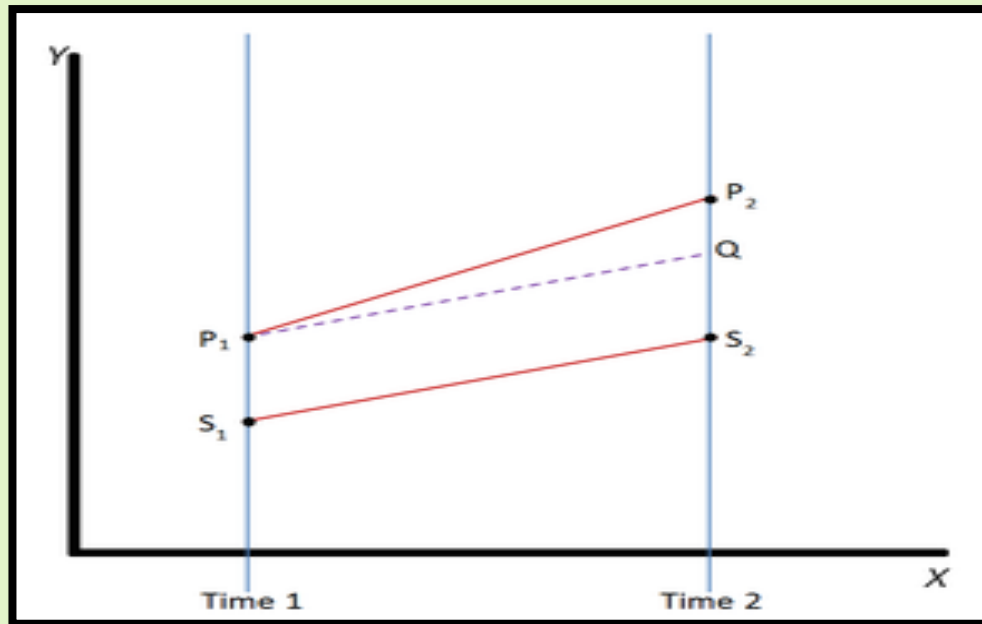
Figure 4 Graphical Representation of DD method

The fundamental assumption of the DD estimator is that the control-group trend is identical to the trend that the treated group would have had in the absence of treatment. Further, a statistical test for significance (paired t-test) was also done for assessing whether the change in mean values of baseline and end-line (increase or decrease) for each case (beneficiary) and control (non-beneficiary) groups, are statistically significant or not. The inferences were drawn at 5% level of significance.

Chapter 3

3.1 Results and Discussion

The Results of the current impact evaluation of the "iCARE" program of the HCL Foundation is measured on three important program components namely 1) community and the institution building, 2) effective usage of ICT Tools and 3) collaboration at block and the district level for better planning and implementation. These three important components are described below briefly.

3.1.1 Community and the institution building

This component of the program is perhaps the most central to the organization and its objective of ecological restoration and resilience. This includes recruitment and training of Community Resource Personnel who form the bridge between the organization and the community at habitation and village level. They help not just in communication but also in stake holder management, capacity building of the community and help build habitation level institutions. In order to make sure that the CRPs are accountable not to the organization but to the community, their monthly honorarium is paid not directly by the implementing organization but by the village institution, accounts of which are kept and audited judiciously. Additionally, they organize awareness campaigns, training programs on ecological and agricultural best practices, involve the community in commons restoration and management activities. Make them aware about the rights over the common and guide them in attaining the same through mobilization. They also motivate people at habitation level to participate in the Panchayat Raj Institutions. The CRPs also help the members of the community in availing government schemes like old age and widow pension schemes, farm subsidies for native cow-based agriculture and other social security benefits. This makes them central to the program and creates a community level involvement in the restoration activities. They also nurture and inculcate the importance of the commons, the need to protect and restore it along with establishing community level management practices.

3.1.2 Effective Use of ICT

Various tools like CLART (Composite Landscape Assessment and Restoration Tool), GEET (GIS-Enabled Entitlement Tracking System), CLM (Common Land Mapping) and other are developed at the backend to harness social security schemes, conservation of commons and mapping the common very effectively and efficiently. CLART developed by FES is a Geographic Information System (GIS) tool developed to address an observed gap in considering different, equally important parameters while planning region-specific soil and water conservation measures. It overlays various layers of lithology, drainage, slope, land use and land cover and provides the recharge potentiality of the area through an easy to understand colour coded map. This tool helps harness the funds of MGNREGA in a much more productive and scientific manner thus contributing to soil and moisture restoration. The main focus of the FES through GEET app is to strengthen the livelihood of small, marginalized and landless households through access to various social security schemes. GEET enhances community participation in tracking their rights and entitlements as informed citizen. It further assists the state, district and government officials in monitoring the outreach of government programs and schemes.

The CLM tool creates a GIS- based database of boundary of the common land. This common land is then registered in the panchayat asset register, through the Gram-Sabha resolution. The major impact of the CLM app is the demarcation of the common land and its utilization by the community through the community. Therefore, the second main pillar of iCARE program is the penetration and usage of ICT tools for proper planning, implementation and monitoring of the ongoing activities in a particular village, panchayat and the block.

3.1.3 Collaboration at Block and District Level for Better Planning and Implementation

This component of the program focuses on creating an enabling atmosphere for restoration of commons by engaging with the block and district level government officials through workshops, training programs, development of habitation level institutions and creation of multi-actor platforms and federation of village institutions. This is the third most important component of

the iCARE program where the community get benefitted through engagements of various government departments like Rural Development & Panchayatiraj, Department of Agriculture, the PHE department, MGNREGA etc. and private sector actors like banks, multinational organizations which supports major important development activities for the communities. The development activities are carried out by signing the MOU between the Village Institution formed and the related government departments or private sector players associated for channelizing the funds and other requirements.

Overall, the three input domains help create awareness in the community and enable better participation and utilization of MNREGA funds. That in turn helps in ecological restoration including soil and moisture conservation, revegetation activities, better livelihood opportunities and greater access to social security schemes for the members of the community. These further helps achieve the target of resilient rural livelihoods and ecological restoration (Figure 5).
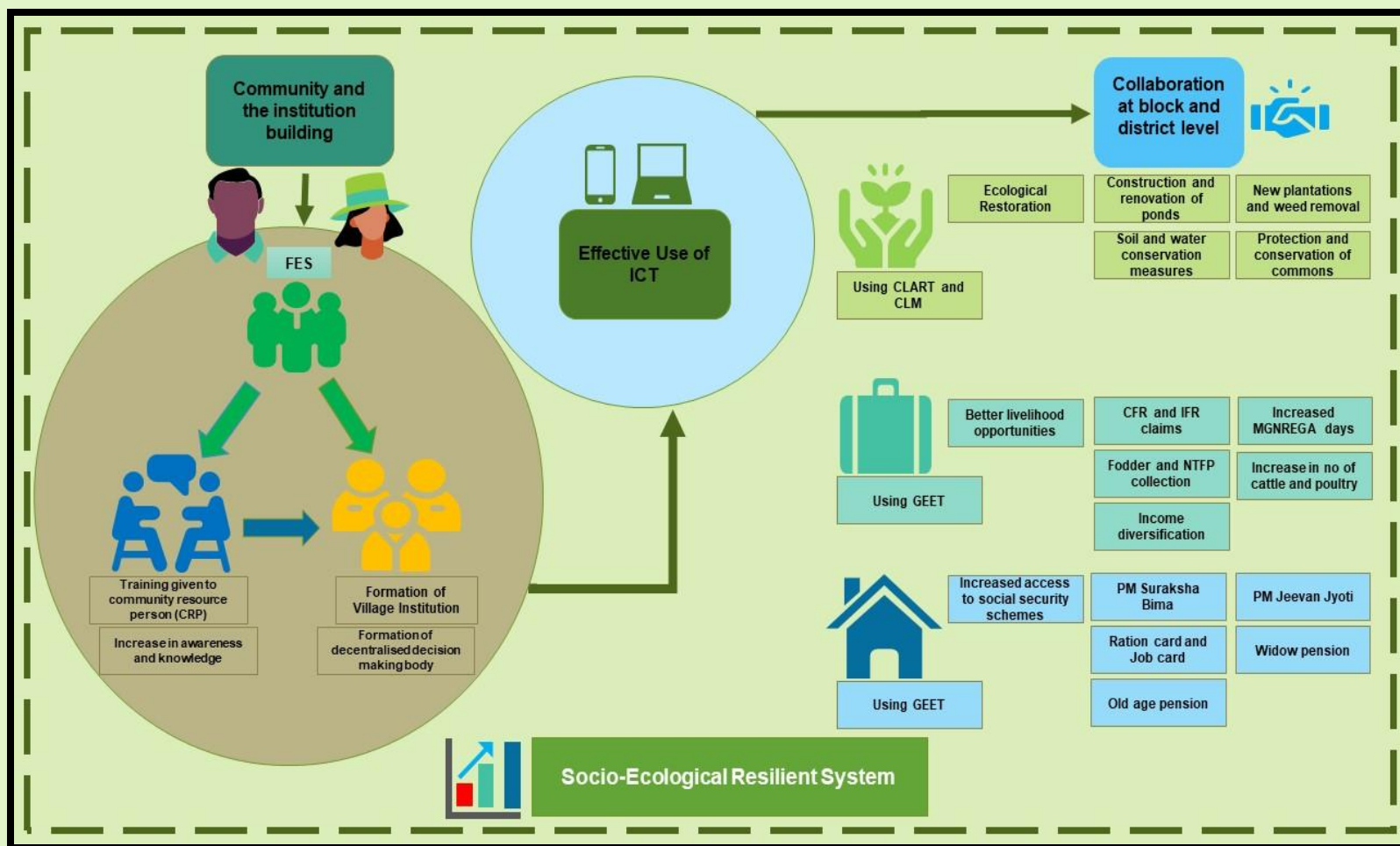
Figure 5 Socio-Ecological Resilient System

3.2 The Beneficiaries

The planned activities like improved self-governing capacity, improved vegetative cover and biodiversity, enhanced capacities of community institutions, adoption of complementary strategies of community mobilisation, conservation planning based on ICT tools and administrative arrangements, which are imperative for successful collaborative action. After consultation with FES team, field data collection was done at the habitation level. While village and habitation level information was obtained through focussed group discussion, key informant interview of various stakeholders were conducted to understand the functioning of village institutions. This included community resource persons and an extensive household survey using the mobile-based data collection system as discussed in the methodology. To get an idea of the beneficiary population, socio-economic profile of the beneficiary was analysed. The sampled beneficiaries are largely marginal to small farmers with land holding less than 1 hectare. Most of the beneficiaries are poor and belongs to SC, ST and OBC social groups. Most of the sampled beneficiaries are illiterate and doing subsistence farming and cattle rearing in some blocks due to water scarcity for agriculture practices. The land in most of the blocks are undulating, making agriculture very much challenging. Kadana block of Mahisagar district in Gujarat has the highest percentage of livestock rearing beneficiary population, as the state government gives subsidies and monthly allowance for local cow bread. NP Kunta block of Andhra Pradesh has the highest percentage of average annual income which is above INR 1.2 lakh. Block wise details of the socio-economic profile of the sampled beneficiaries are depicted in figure 6 below.
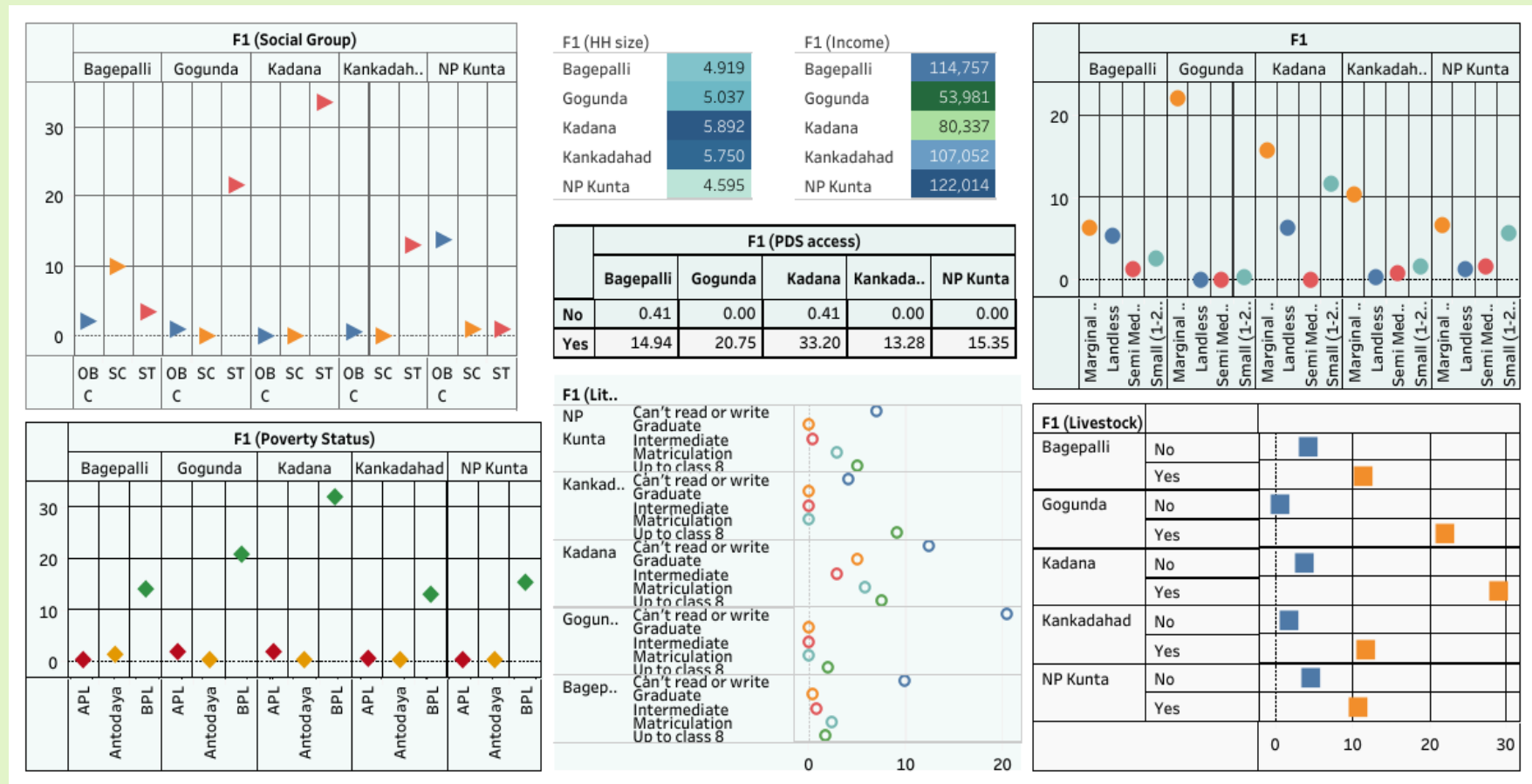
Figure 6 Socio-economic profiles of sampled population

3.3 Results of Focused Group Discussion

There were 14 focused group discussion sessions arranged at different project locations. The total number of participants in these sessions are 258, out of which 128 are male and 126 are female participants, who have responded on various questions, as detailed in Annexure 2. The name of the villages where these FGDs were conducted are Rawaliya Kala 1, Bhuj and Asan of Gogunda block of Udaipur district in Rajasthan, Nallaguntlapalli, Bajjapura, Goravandalapalli and Gondalapalli villages of Bagepalli block of Chikballapur district in Karnataka, Reddymalapalli, Godduveelagala, Jedimekalapalli, Thunmalabyln and Chinnakagaripalli villages of NP Kunta block of Sri Sathya Sai district in Andhra Pradesh and Koriapal, and Balikuma villages of Kankdahad block of Dhenkanal district in Odisha. Village wise number of male and female participants are depicted in the figure 7 below.
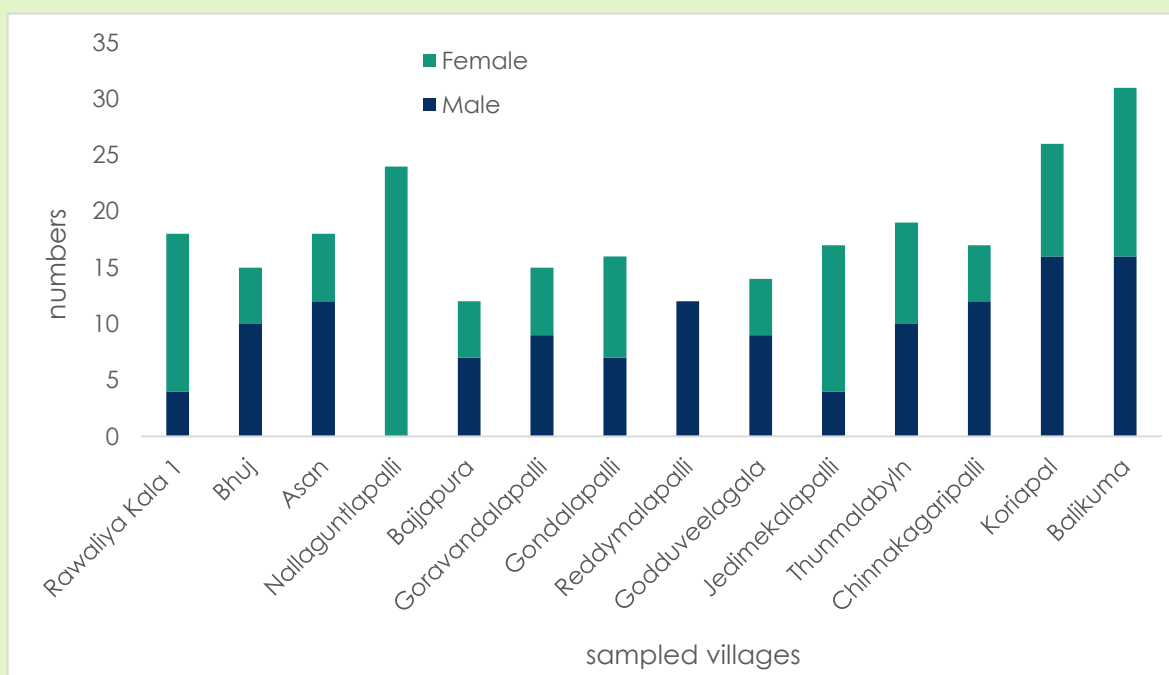
Figure 7 Number of male and female participants in sampled villages

3.4 Construction of water harvesting structures

Several water harvesting structures like big ponds, farm ponds, cattle ponds, gully-plucking and check dams were constructed by leveraging the funds from public program MGNREGA and also through other donor agencies as a part of the CSR funding. FES has trained the CRPs and their field staffs on how to leverage various funds for the development of the community. In this process many new construction as well as renovation of the old water harvesting structures were carried out at various locations during the project implementation phase. Highest number of check- dams were constructed in the Balikuma village of Kankadahad block, and the highest number of farm ponds were constructed in Thunmalabyln village of NP Kunta block. Figure 8 below represents the newly constructed water harvesting structures at different villages.
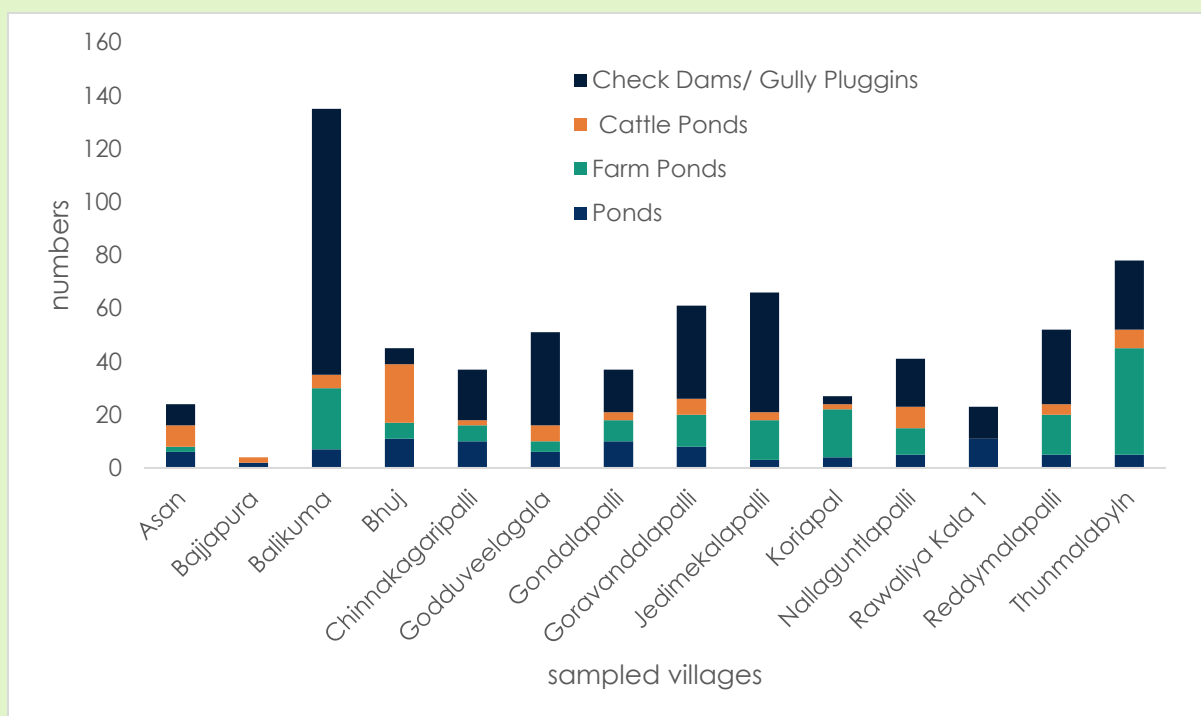
Figure 8 Details of water harvesting structures constructed in the sampled villages

3.5 Restoration activities

One of the major activities of the iCARE program was restoration of the commons. There are various project interventions that are leveraged through the MGNREGA and other line departments at various locations. Some of the important restoration activities are the restoration of feeder- channel (feeder-channel helps to store the rain water coming from the mountains in reservoirs/ tanks or ponds), trenching activities and plantation drives in the common land. During the FGD the restoration activities are also recorded. IN Reddymalapalli village 300 acres of trenching work has been done during the project duration. Other detailed activities are depicted in figure 9 below.
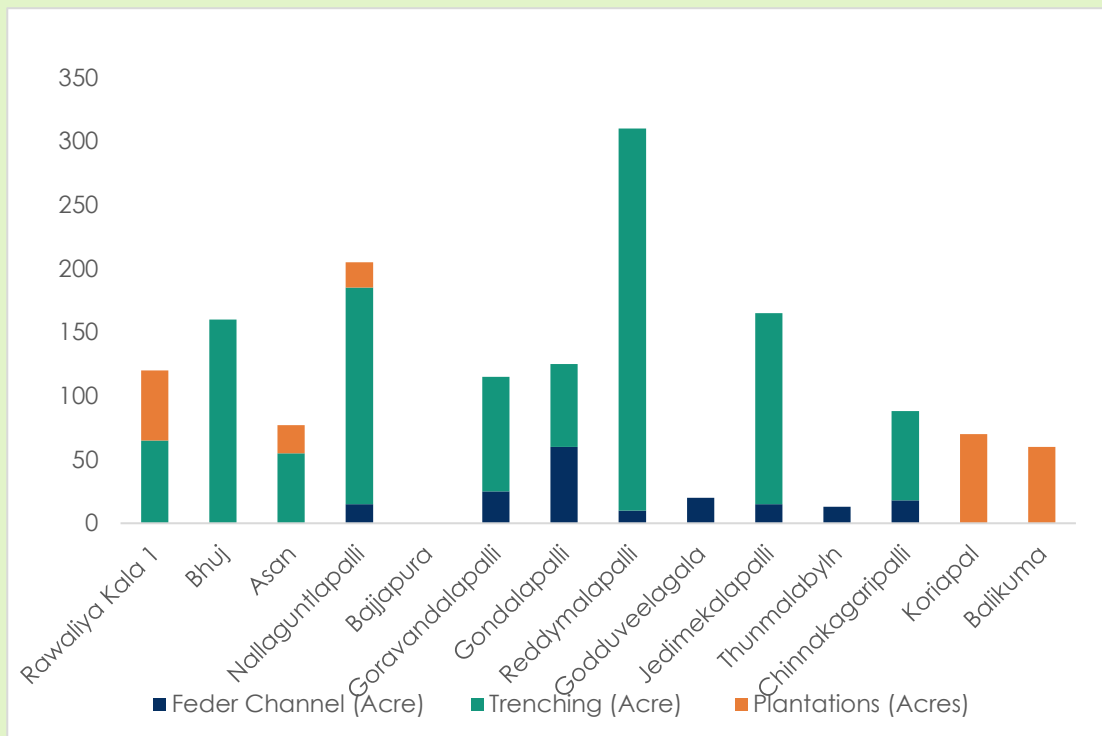
Figure 9 Details of the restoration activities in the sampled villages

Box 1 (Impact of village institution on forest)

The impact of village institution in conserving the common are quite significantly visible in the field. During the field survey in Reddymalapalli village of Chamalagondi Gram-Panchayat in NP Kunta block in the state of Andhra Pradesh, we could see two contrasting forest areas in terms of vegetation health on the either side of the village. The common forest conserved by the village institution had a denser canopy cover as compared to the government protected forest, which is also part of the Ishwarmala Reserve Forest. The forest in this region has a problem related to a local weed called "Boda", which spreads very fast and it has heavy oil contents and can stimulates forest fire very rapidly. The local village institutions at Reddymalapalli villages identified this problem and they regularly used to uproot the "Boda" from the forest to check its spread, which is not the case with the government protected part of the forest. It is therefore, the community protected forest is in much better condition. (Figure 10 & 11)
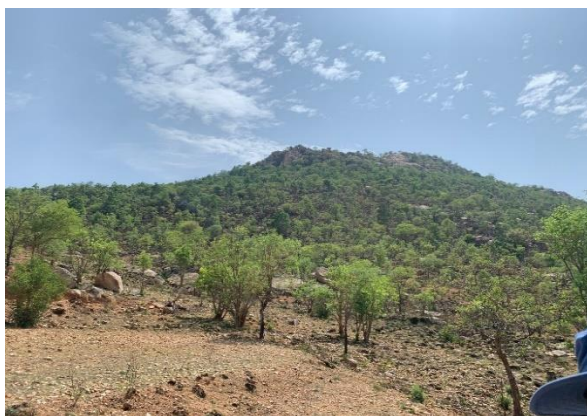
Figure 10 Forest protected by villagers

Figure 11 Forest protected by forest department

Case Study 1

Ecological restoration and development of pasture land through the formation of village level institution (VI) and self-governing system in Gogunda Block of Udaipur, Rajastahn.

One of the major interventions of FES in Gogunda block of Udaipur district is the development of pasture land on commons (non-revenue). The common land (Charagah) is used by the villagers to collect fodder, fuelwood, NTFP (fruits and seeds) and medicinal herbs. The development of pasture land is monitored and controlled through the village institution. During the field visit, four such pasture lands in Ravaliya Kalan village panchayat namely Bhujeshwar Charagah Vikas evam Prabandh Samiti, Bhuj; Jai Bayan Ma Charagah Vikas Samiti, Asan; Charagah Vikas evam Prabandhan Samiti, Asan and Charagah Vikas evam Prabandhan Samiti, Nalodar were explored for knowhow the management of these pasture land. It was found that one such village institution has three executive posts of President, Secretary and Treasurer, and eleven members. These executives are elected by voting in a grams sabha. During the interaction with the members and officials of Bhujeshwar Charagah Vikas evam Prabandh Samiti, Bhuj; following important information and details of the working of the village institution were obtained. Some important details are below.

Details of the Village Institution

Name: Bhujeshwar Charagah Vikas evam Prabandh Samiti, Bhuj.

Total command area (Charagah) under VI - 52 hectares

Command Villages- Bhuj, Solanki ka Gurah, Lavar and Rayacha

Total household dependent on the VI (Charagah)- 250

Formation of VI- 2017

Membership- Villagers who are above 18 years of age

Major responsibility of the Village Institution

1) Maintains of the Charagah and boundary wall.

2) Plantation of local tree species (fruits, timber, NTFP and fodder).

3) Preparing the list of villagers and checking their suitability/ eligibility to avail the various social security schemes, being implemented by the state as well as the central government.

4) Training and awareness programs to effectively and judiciously usage of the commons.

Usage of the common land

The common land (Charagah) is used by the villagers to collect fodder, fuelwood, NTFP (fruits and seeds) and medicinal herbs.

Rules of the Village Institution

1) Cutting charges one time (Rs 20/ Month)

2) Villagers associated with the VI only have the access to the Charagah

3) Ban on open grazing

4) Fine of INR 1000 if non-VI beneficiary/animals trespasses the Charagah or any other VI beneficiary trespasses without paying the monthly fees of INR 20.

5) Fine of INR 500 if any one cuts the green tree branches from any tree in the Charagah. Villages can collect dry leaves/ dry wood but can't fell a green tree.

Source of funding and regulation of funds of the committee

1) Some funds come from FES for formation of gabion and pukka structure in the Charagah.

2) Collection of monthly charges of entering into the Charagah.

3) Collection of fines from the villagers.

4) All the funds collected are directly sent to the bank account of the VI.

5) All the payments are made through chequebook of the VI.

Benefits from Fodder

The Bhujeshwar Charagah Vikas evam Prabandh Samiti, Bhuj has two Charagah; Moravawan 1 (27 hectares) and Morawan 2 (25 Hectares). The president of this VI, Bhawani Shankar Shrimali informed that, approximately 27,000 bundles of fodder grass can be collected from the two Charagah yearly. One bundle of the fodder grass contains 3-kilogram grass. One kilogram of this fodder grass is priced at INR 10. The annual production of fodder grass is 81 tonnes from the two Charagah of this VI.

Other Benefits of the Village Institution

Vakta Lal, the treasurer of Bhujeshwar Charagah informed that the VI distributes Rabi and Kharif seeds to the villagers time to time free of cost. The seeds are coming to the VI through the gram panchayat for distribution and promotion of agriculture. He also informed that many agricultural tools are distributed to the villagers too at subsidised cost. The VI provides receipt of the money taken from the villagers and this money is being used for the development works of the VI. He also informed that time to time plantation drives are carried out in which the villagers are provided various tree sapling of local species. All these activities exemplify that the village institution is able to ensure good governance on commons and contribute to enhancing socio-ecological resilience.

Meeting of the Village Institution

It is mandatory to call one meeting every month and a major meeting every 2-3 months by the president of Bhujeshwar Charagah to discuss issues and challenges of the villagers in managing the commons. The proceedings of these meetings are well documented in the meeting book. The important recommendations of the VI are then sent to the respective gram panchayat for their necessary actions.

3.6 Program Impact Evaluation

The impacts of various outcome indicators like increased sources of income, increased access to social security schemes, increased man days of labour in MGNREGA (In iCARE program MGNREGA is directly associated with the ecological restoration in terms of water management, soil and moisture conservation, plantation and management of commons), increase in average income and status of livestock. Each of these interventions implemented in the project for the five blocks are analysed using this method where cases of treatment groups (beneficiaries of interventions) were compared with the control group (non-beneficiaries).

3.6.1 Impact Evaluation of Increased Access to Social Security Schemes

One of the objectives of iCARE program is to facilitate the beneficiaries to access the maximum number of social welfare and social security schemes of the state as well as the union government. The community resource persons trained through iCARE program are applying mobile-based application called GEET (GIS-Enabled Entitlement Tracking System). The main usage of GEET is to strengthen the livelihood of small, marginalized and landless households through access to various social security schemes. The data collection through GEET also enhances community participation in tracking their rights and entitlements as informed citizen and assists in monitoring of different programs by the government officials. It is quite evident that the number of social security schemes accessed by a beneficiary in comparison to non-beneficiaries has improved significantly in all the blocks in the end-line scenario, when compared to the baseline (table 2). For the case villages the difference in accessing the social security schemes in the end-line as compared to the baseline is five whereas in the control villages it is only one. So, we can say that the case villages have access to four more government schemes as compared to the control villages. It can be attributed to the project interventions.

Table 2 Impact Evaluation of increased access to social security schemes (SSS)

Block	Case SSS BL	Case SSS EL	Control SSS BL	Control SSS EL	Difference Case	Difference Control	DID
Bagepalli	4	8	3	3	3	0	3
Gogunda	5	10	2	3	5	1	4
Kadana	5	13	1	1	7	0	7
Kankdahad	5	11	2	3	6	2	4
NP Kunta	6	9	5	6	3	1	2
Average	5	10	2	3	5	1	4

3.6.2 Impact Evaluation of MGNREGA Employment

One of the prime aim of the iCARE program is to leverage the MGNREGA effectively for channelizing the workforce for conservation activities like digging the trenches, deepening/ de-siltation of existing tanks and ponds, construction of new farm ponds, cattle ponds and other water harvesting structures in the project blocks for the community usage. iCARE program also leveraged the MGNREGA funds for ecological restoration of forests in the project villages. Some of the specific activities included controlling of forest fire, removal of unwanted weeds from the forest area, raising plantations at the degraded sites, digging semi-lunar trenches around the new saplings in order to conserve and restore the forest. As a result, MGNREGA in the project villages not only help in ecological restoration of the commons but also enhance man-days of work, contributing to improved income. The average man-days of employment of the beneficiaries in project (case) villages is significantly higher as compared to that of non-beneficiaries of non-project (control) villages, which can be attributed to the activities and efforts of i-CARE program. Table 3 represents the average number of MGNREGA days in project and non-project villages in both the baseline and end-line scenario. The effect size (increase) is maximum for Kadana block, where it recorded 49 days of additional employment after the iCARE interventions. Difference in employment creation under MGNREGA for case villages in the baseline and the end-line is of twenty-six days, but for the control villages this difference is zero. This means that, under the similar condition, the case villages are doing far better than the control villages, which is solely due to the FES interventions.

Table 3 Impact evaluation of MGNREGA employment in terms of man-days of employment

Block	Case MGNREGA BL	Case MGNREGA EL	Control MGNREGA BL	Control MGNREGA EL	Difference Case	Difference Control	DID
Bagepalli	36	72	29	32	36	3	33
Gogunda	46	66	6	17	20	11	9
Kadana	47	96	8	8	49	0	49
Kankdahad	22	34	12	14	12	2	10
NP Kunta	84	96	67	50	12	-18	30
Average	47	73	24	24	26	0	26

3.6.3 Impact on Sources of Income

Various project activities (like MGNREGA and increased access to various social security schemes) created an enabling environment to diversify the new sources of income at the community level. When we compared the sources of income of the beneficiaries at the baseline and end-line scenario, it is quite evident that the sources of income have increased. When we analyses the sources of income for the non-beneficiary population it is almost constant or even less in the end-line scenario as compared to the baseline scenario. Kadana block of Mahisagar district of Gujarat has seen highest increase in the sources of income. The block level increase in the sources of income is depicted in table 4 below. The difference in sources of income for the case villages in the end-line on comparing with the baseline is four whereas, for the control villages there is no increase in the new sources of income for the same time period.

Table 4 Impact evaluation of increase in sources of income(Number)

Block	Case Source of income BL	Case Source of income EL	Control Source of income BL	Control Source of income EL	Case Difference	Control Difference	DID
Bagepalli	2	6	4	4	4	0	4
Gogunda	3	6	4	4	3	0	3
Kadana	3	8	2	2	5	0	5
Kankdahad	3	6	3	4	3	0	2
NP Kunta	3	7	5	5	4	0	4
Average	3	7	4	4	4	0	4

3.6.4 Impact Evaluation of Livestock Rearing

The impact of livestock rearing is conditional to the rainfall patterns in the project villages. State like Gujarat where incentive has been given to the beneficiaries for adoption of cows, the numbers of cattle in the end-line scenario has gone-up as compared to the baseline. But in the states like Odisha and Karnataka where the livestock rearing has decreased due to multiple reasons. In Odisha the beneficiaries were landless tribal population and used to rear the cattle. After the project interventions, they have been given the land to practice agriculture through CFR (community forest rights) and IFR (Individual forest rights), which have brought focus on agricultural activities and NTFPs collection. This, in turn, has led to decline in livestock rearing activities. The Bagepalli block of Karnataka is situated in the Rayalaseema region which has lower rainfall, however in the past 2-3 years the region has experienced good rainfall. It is therefore, the villagers have shifted to agriculture (specially tomato and other cash crops) instead of cattle rearing. NP Kunta block of Andhra Pradesh also comes under the Rayalaseema region, which is a rainfall shadow region, has the highest effect size (increase) in terms of cattle rearing (Table 5).

Table 5 Impact of cattle/livestock rearing(number)

Block	Case Livestock BL	Case Livestock EL	Control Livestock BL	Control Livestock EL	Difference Case	Difference Control	DID
Bagepalli	11	13	11	15	2	4	-3
Gogunda	5	7	4	5	2	0	2
Kadana	13	33	3	6	20	3	17
Kankdahad	22	12	1	1	-10	0	-10
NP Kunta	23	16	16	4	-7	-13	6
Average	15	16	7	6	1	-1	2

3.6.5 Impact Evaluation on Income

The multiple factors listed above (MGNREGA, livestock rearing, increase in sources of income, increased access to social security schemes and others like shifting to cash crop agriculture, IFR and CFR, collection of NTFP etc.) have contributed to the increase in total income for the beneficiary farmers. Income for both the beneficiary and non-beneficiary farmers have increased when we compared it with the end-line but the gain in income of the beneficiary population has almost doubled as compared to the baseline scenario. The change of income is shown in the table 6 below. The difference in the average annual income of the case villages is INR 46,818 and for the control population it is INR 17,945. Subsequently, we can infer that the I-CARE programme has contributed to an average increase of INR 28873 per beneficiary, as measure through double difference method.

Table 6 Impact evaluation of increase in income(INR)

Block	Case Income BL	Case Income EL	Control Income BL	Control Income EL	Difference Case	Difference Control	DID
Bagepalli	58676	114757	58500	93500	56081	35000	21081
Gogunda	39222	54864	22444	27444	15642	5000	10642
Kadana	55189	147224	9308	17000	92035	7692	84343
Kankdahad	48874	77003	15136	18909	28130	3773	24357
NP Kunta	79811	122014	66087	104348	42203	38261	3942
Average	56354	103172	34295	52240	46818	17945	28873

3.7 Socio-Ecological Resilience

The socio-ecological resilience of various project blocks is computed as an average of twenty-six indicators grouped under process and the outcome indicators as depicted in the figure 3. The process index included three major dimensions namely: collaborative action for planning and implementation (seven indicators), capacities of communities and community-based institutions (six indicators) and ICT penetration (one indicators). The outcome index comprised of three major dimensions namely: ecological restoration (four indicators), better governance (three indicators) and better livelihood opportunities (five indictors).

3.8 Process and Outcome Index

The process index is computed from the reported metrics of target achievement by the implementing agency (FES) at the block level. The index is a relative score, which is computed on normalised values of percentage target achievement on fourteen indicators. As per the computed values, Kankadahad block of the Dhenkanal district in the state of Odisha was the most performing block and Gogunda block of Udaipur district in the state of Rajasthan scored the minimum based on process indicators. The top performance of Kankadahad block could be attributed to mainly four activities, i.e., number of workshops with block officials, number of NGO officials trained, number of CRP recruited and number of village institutions accessing ICT tools and applications. Whereas, Gogunda block recorded least score on eight indicators (number of workshops with the block officials, number of NGOs official trained, number of VI formed, umber of community members trained, number of VI's committee members other community members trained, number of CRP recruited, number of CRPs and volunteers trained to undertake large scale capacity building programs, number of habitation conservation plans developed and number of VIs accessing tools and applications) out of total fourteen process indicators. Block wise process index score is depicted in figure 12 below.
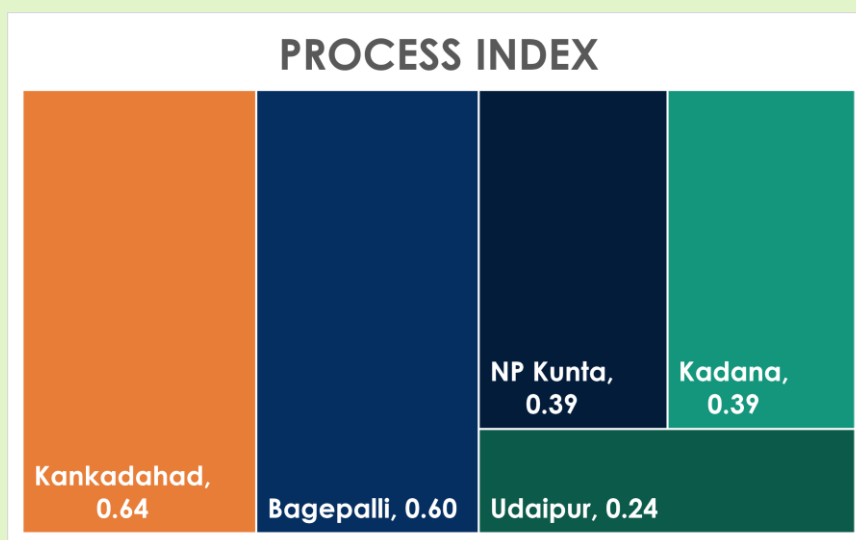
Figure 12 The process index score of different blocks under iCARE program

The outcome index is computed from twelve indicators that measured the quantified outcomes, like percentage change in income, sources of income, access to social security schemes etc. (details in Annex 3). Majority of the outcome indicators are computed from the household survey in the project villages. Based on the outcome indicators, Kankadahad block of the Dhenkanal district achieved maximum outcomes and Gogunda block of Udaipur district achieved minimum, which is similar to the metrics of the process index. Out of thirteen outcome indicators, Kankadahad block performed well on two indicators namely, commons brought under the community conservations and number of plots selected for the ecological monitoring. The Gognda block of Udaipur district is placed at the bottom on seven outcome indicators (number of habitation conservation plans developed, commons brought under community conservation (in ha), number of conservation plots selected for ecological monitoring, amount leveraged for ecological restoration, HHs having access to social security schemes, number of HH benefitted indirectly and increase in the income). Block-wise outcome index score is depicted in figure 13 below.
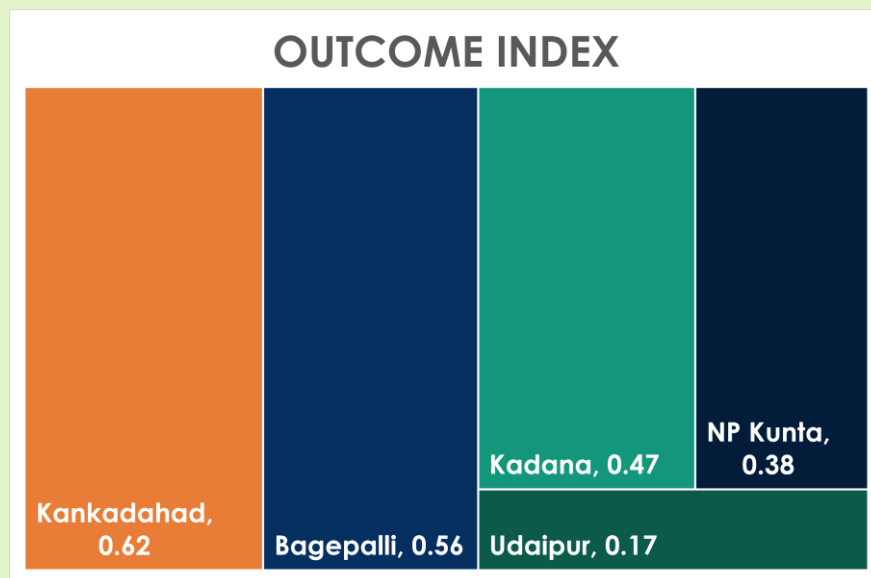
Figure 13 Score of outcome index for the iCARE program

3.9 The Composite Socio-Ecological Resilience Index

The composite socio-ecological resilience index is the average score of the process and the outcome index. It is a notable fact that the local climatic- conditions, soil type, land gradients and other ecological factor influences the score of the index. For example, the climatic condition of Gogunda block of Udaipur district is the more arid as compared to the rest of the blocks. The higher population density, degraded soil type, lower rainfall, undulating terrain, and higher temperature makes agriculture a very challenging livelihood activity at Gogunda. It is for this reason, the farmers of this block adopt cattle rearing and migrate to nearby cities like Ahmedabad, Surat etc. to secure their livelihood. In this ecological context, the attempts of securing water availability by development of watershed structures, ecological restoration like plantation on hills, digging tranches to reduce soil-erosion etc. that have been implemented under the project will have positive impact in the future. However, with the support of CRP, womenfolk are getting man-days employment through MGNREGA in absence of menfolk who migrates to nearby cities to seek livelihood.

In case of Bagepalli and NP Kunta blocks, the beneficiaries have changed their livelihood patterns in the last two-three years. These two blocks are rainfall deficit region and relied more on livestock and cattle rearing, as one of the important livelihood activities. Now in the recent past, the region is experiencing a higher rainfall. Coupled with this, the iCARE project interventions, farmers have shifted to the cultivation of cash-crops like tomato, groundnut, watermelon, fruit orchids etc. to supplement their income in the project villages.

The Kankadahad block have good fertile soil, forest, and have appropriate water availability to support agriculture and related livelihood opportunities. Earlier, the beneficiaries did not have access to the forest resources, but the communities have been granted access to the forest resources through CFRMC (community forest resource management committee) and Individual Forest Rights due to the interventions of iCARE program. This has contributed in diversification of income sources and increase in income. The similar pattern is seen in the Kadana block, where the beneficiaries has been given the CFMRC and the Individual Forest Right. In addition, the programme has also helped to leverage the existing different ongoing government schemes

related to cattle rearing. Application of ICT tools and active involvement of CRPs has had profound impact in enhancing the socio-ecological resilience of different project sites of i-CARE program. Based on all 27 indicators, the performance of I-CARE programme is calculated at the block level (Figure 12).
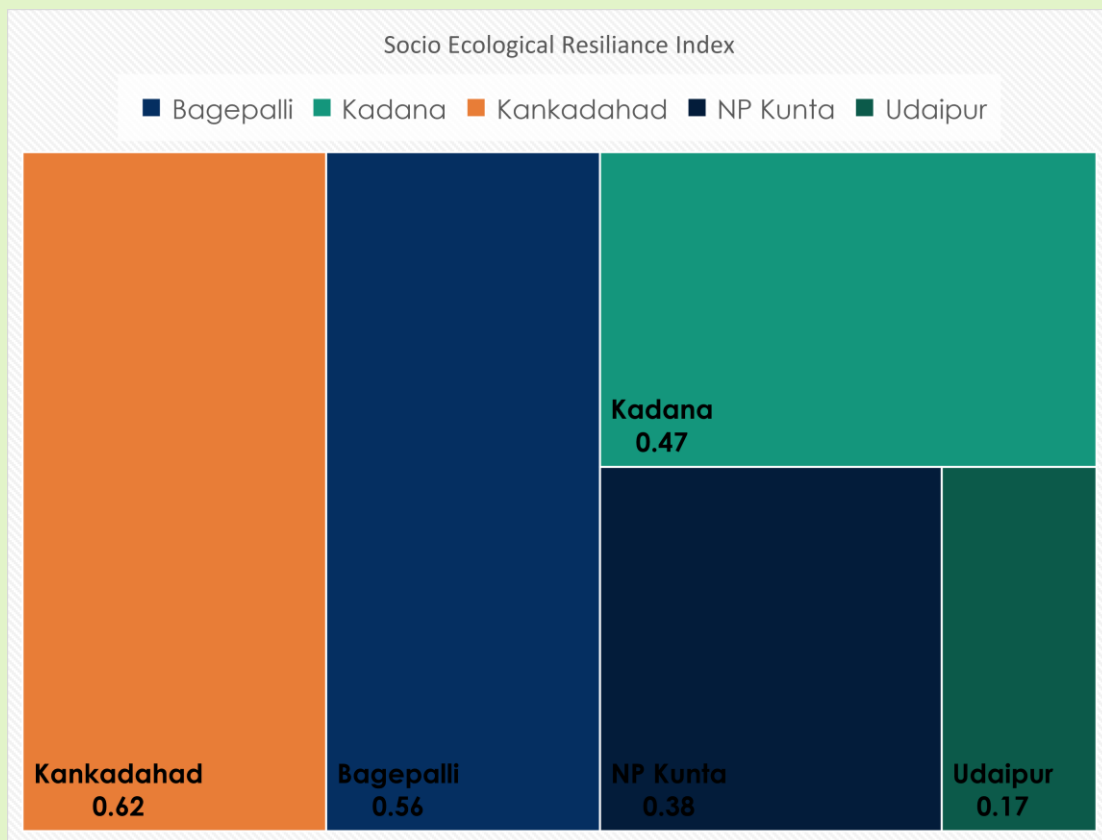
Figure 14 The Socio-Ecological Resilience Index for the study area.

Annexure 1

Detailed Activity	Kadana		Udaipur		Bagepalli		Kankadahad		Semiliguda		NP Kunta	
	Target 2017-20	Achieved 2021	Target 2017-20	Achieved 2021	Target 2017-20	Achieved 2021	Target 2017-20	Achieved 2021	Target 2017-20	Achieved 2021	Target 2017-20	Achieved 2021
No of Workshops with block officials	3	2	3	1	3	3	3	12	3	8	3	2
No of Workshops involving multiple actors	3	6	3	6	3	4	3	8	3	6	3	9
No of MoUs, facilitating orders	-	3	-	0	-	12	-	3	-	-	-	2
No of campaigns organized	3	3	3	4	3	5	3	6	3	12	3	17
No of Gram Panchayat members, Government, NGO officials trained	640	421	640	0	640	397	640	649	640	793	640	
No of Village Institution, Committee Members, other community members trained	2500	2461	2500	340	2500	8637	2500	1916	2500	1134	2500	1499
No of CRPs and volunteers trained to	100	86	100	64	100	353	100	86	100	534	100	503

undertake large scale capacity building programmes											
No of Habitations formed	100	118	100	63	100	125	100	122	100	125	100	80
No of Habitations surveyed	100	118	100	100	100	125	100	68	100	101	100	99
No of CRP recruited	8	8	8	8	8	8	8	13	8	13	8	8
No of village institutions accessing tools and applications	100	97	100	26	100	125	100	150	100	193	100	125
No of HHs having access to social security schemes	7500	1997	7500	1633	7500	6607	7500	5093	7500	7209	7500	2254
No of Households benefitted indirectly	4000	2650	4000	0	4000	1200	4000	3603	4000	3012	4000	4000
No of federations /MAP crafted at landscape level	1	2	1	2	1	4	1	2	1	4	1	1
No of habitation conservation plans developed	100	86	100	0	100	125	100	81	100	119	100	80
Commons brought	3500	1964	3500	625	3500	4074.7	3500	12572	3500	4057	3500	3409

under community conservation (in ha)												
Amount leveraged for ecological restoration (Rs Lakh)	204	110	204	87	204	632	204	219	204	707.41	204	682
Representative sites selected for ecological monitoring	2	2	2	2	2	2	2	2	2	2	2	2
No of conservation plots selected for ecological monitoring	6	6	6	6	6	6	6	8	6	6	6	6

Annexure 2

Availing the use of PDS

◯ Yes, Regularly, every month

◯ Yes, Frequently ,Once in 3-4 months

◯ Yes ,Occasionally,Once in 6 month

◯ Yes Rarely, Once in 12 months

◯ Yes but haven't used in last 12 months

◯ No

What is the highest level of literacy in the household

◯ Can't read and write

◯ No Formal schooling but can read and write

◯ Uptill class 8th

◯ Matriculate

◯ Intermediate

◯ ITI/Diploma

◯ Graduate

◯ Post Graduate and above

Directly benefited from which of the following interventions of iCARE

☐ Not a beneficiary

☐ Awareness related to agricultural and animal husbandry best practises

☐ MGREGA planning and implementation related to community water harvesting structures, soil erosion prevention and revegetation

☐ Village level institutions

☐ Facilated the access to social security schemes

☐ Land leveling,bunding etc on own land using MNGREGA

Other

_____

Key livelihood activities performed by members of the household

☐ Agriculture on own land

☐ Agriculture on rented land

☐ Cattle Rearing

☐ Farm labour

☐ Non-farm labour

☐ Skilled labour

☐ Casual labour

☐ Migrant labour

Land ownership of the family

_____

Land Area

_____

Unit

_____

Owned in 2021

_____

_____

○ Hectare   ○ Acre   ○ Bigha   ○ Kattha

Owned in 2017

_____

_____

○ Hectare   ○ Acre   ○ Bigha   ○ Kattha

Rented in 2021

_____

_____

◯ Hectare   ◯ Acre   ◯ Bigha   ◯ Kattha

Rented in 2017

_____

_____

◯ Hectare   ◯ Acre   ◯ Bigha   ◯ Kattha

Crops Grown

_____

Net Sown Area

_____

Unit

_____

Yield

_____

Toor_2017

_____

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

_____

Toor_2021

_____

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

_____

Wheat_2017

_____

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

_____

Wheat_2021

_____

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

_____

Paddy_2017

_____

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

_____

Paddy_2021

_____

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

Maize_2017

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

Maize_2021

_____

◯ Acre   ◯ Katha   ◯ Bigha   ◯ Hectare

Source of Irrigation 2021

Area

Unit

Number of days

_____

Rainfed

_____

_____

○ Acre   ○ Bigha   ○ Hectare

_____

Tube Well

_____

_____

○ Acre   ○ Bigha   ○ Hectare

_____

Ground Water

_____

_____

○ Acre   ○ Bigha   ○ Hectare

_____

Well

_____

_____

◯ Acre   ◯ Bigha   ◯ Hectare

_____

Hand Pump

_____

_____

◯ Acre   ◯ Bigha   ◯ Hectare

_____

No.of cattle owned by family

_____

2021

_____

2017

_____

Cows

_____

_____

Goat

Buffalo

Sheep

Poultry

No.of months water from ponds is available for cattle in 2021

No.of months water from ponds is available for cattle in 2017

For which of the following things is the family dependent on the village commons for their subsistence/livelihoods -

- ☐ Grazing of their animals
- ☐ NTFP collection
- ☐ Source of water
- ☐ Cultural associations
- ☐ Firewood
- ☐ Food and fiber
- ☐ Other

Other

To what extent are they dependent on the commons for grazing ?

- ☐ Primarily dependent on the commons for grazing
- ☐ In addition to to other sources as a complimentary source

17. Has any member of the family been given employment under MNREGA ?

- ○ Yes
- ○ No

If yes then no.of man days

What other social security services do you avail from and from when

Frequency

From

_____

Widow pension

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Anganwadi

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Schemes related to marriage

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

PDS

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Pradhan Mantri Kisan Samman Nidhi

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Primary Health Care

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Ujwala

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Government Schools with mid day meals

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Old age pension schemes

_____

_____

○ 2017   ○ 2019   ○ 2020   ○ 2018   ○ 2021   ○ Before 2017

Other social schemes

_____

Annual income of the family in INR in 2021

_____

Annual income of the family in INR in 2017

_____

Does any member for the family participate in the management and conservation of the commons?

◯ Yes

◯ No

If Yes, when was the last time they participated in any of the meetings ?

◯ Last week

◯ Last month

◯ 2-3 months ago

◯ 3-6 months ago

◯ 6-12 months ago

◯ Last year

What according to you are the key issues that the village commons face ?

_____

Location

_____

latitude (x.y °)

_____

longitude (x.y °)

_____

altitude (m)

_____

accuracy (m)

_____

Semi Structured Key Informant Interview

Impact Evaluation of iCARE Program Implemented by FES, Anand

<u>**Key Informant Interview**</u>   **Date-**

1. Name of the Key Informant –_____

2. Village Name –_____

3. Organization/Institution associated with –
   _____

4. Association with iCARE –_____

5. Key roles and responsibilities in iCARE program –
   _____
   _____
   _____
   _____
   _____

6. Have you been part of any of the training sessions organised under the programme, if yes then what were the key insights from the same?

   _____

   _____
   _____
   _____
   _____
   _____

7. Are you part of any village level institution facilitated by FES, Anand? If yes, then name of the institution and the key objective of the institution and functional area.

   _____
   _____
   _____
   _____
   _____
   _____

8. In what capacity have you benefited from the iCARE programme?

_____

_____
_____
_____
_____
_____

9. Have you under gone any training in the usage of tools like CLART and GEET ---?
   If yes, how have you used the tool at your village/institution?

_____

_____
_____
_____
_____
_____

10. Where you consulted in the preparation of conservation plan for your village
    commons. If yes, what are the key points that the plan should/has focus/focused
    on?

_____

_____
_____
_____
_____
_____

11. What key activities were done in order to sustainably conserve the commons?

_____

_____
_____
_____
_____
_____

12. Which social security schemes did you help facilitate the villagers with?

_____

_____

Structured Focused Group Discussion

Impact Evaluation of iCARE Program Implemented by FES, Anand

Date of FGD:	
Name of District:	Name of GP:
Name of Block:	Name of Village:
No of participants:	Male: .... Female: ....

Village Profile-2011

Population:

Population Density:

Sex Ratio:

% Of SC population:

% Of ST population:

Presence of Primary Health Centre in the village -Yes/No
$\qquad$ If No, distance of the nearest one-__km

Power Supply Domestic-Yes/No
$\qquad$ State of Availability – 24*7/12hrs or _____

Power Supply Agricultural -Yes/No
$\qquad$ State of Availability -24*7/12hrs or _____

Land Use and Governance Pattern:

Land Use Type	2001	2011	Field Visit date 21
Forest land			
Land under Agriculture			
Irrigated Land			
Land Used as Commons	NA	NA	
Under Common Pool Regime (CPR)	NA	NA	
Water Bodies as commons	NA	NA	

Water Bodies under CPR			

Water related Interventions

1. To what extent does Gram Panchayats give priority to water conservation/ harvesting efforts at the GP level (get their response on the following)

   a. Organising campaigns for increasing awareness on water conservation

   b. Community mobilization efforts for providing contribution in the form of Cash/ kind/ Labour

   c. Priority given for use of funds available under schemes at GP level for creation of water conservation/ harvesting structures.

   d. Issues related to water conservation/ harvesting discussed in meetings

   e. Planning for water conservation/ harvesting activities undertaken- identification of sites/ structures/beneficiaries

   f. Construction of water conservation/ harvesting activities undertaken

g. Resolving conflicts arising over water use/ ensuring equitable distribution of water

2. Has Gram Panchayat made extra effort over the last three years for water conservation and harvesting activities in view of recurring drought/ water crisis?

   a. Mobilizing resources from existing schemes for construction of water conservation / harvesting structures instead of other developmental works like road construction etc.

   b. Creating awareness on the issue of water conservation & harvesting

   c. Repair/ renovation of water conservation & harvesting structure

   d. Selection of ideal/ deserving beneficiaries/ sites for construction of structures

   e. Maintenance of existing structures

3. What are the schemes under which water conservation & harvesting structures has been constructed in the village?

4. How much and in what form community contributed towards construction of water conservation/ harvesting structures?

5. What type of structure have been constructed in the village?

   a. Kundi/ Kuiyan/ Dabra/ Dabri

b. Farm Pond

c. Field Bunds

d. Tank

e. Pond

f. Well with recharging structure

g. Tube well recharging

h. Soak pit

i. Roof water harvesting

j. Check dams

6. In the last 3 years is there any change in the net irrigated area?

7. Does equitable sharing of water take place from the community structure built in the village? (The list below is indicative. Try to get more responses from the community on this)

If yes (How)	If no (reasons)
a) Equal sharing of water among all members of User Group	a) Distance from the water source- most of the water gets used by members close to the structure
b) Sharing of water as per the contribution of members	b) Not involved in planning for benefit sharing by the group
c) Use of water base on need/ farm land	c) Domination by a particular powerful member of the group
d) Others............................	d) Others..............

8. How is the maintenance of the water conservation & harvesting structures ensured in the village? (The list below is indicative. Try to get more responses from the community on this)

Individual Structure	Community / Group structure
By the HH themselves – labour/ material	Contribution by community members as and when needed

By Panchayats under ongoing schemes	Creation of a common fund for maintenance
Others....................	By Panchayats under ongoing schemes
	Others......................

9. What are the benefits that have accrued from water conservation and harvesting activities?

   a. Local wage employment:

   b. Increased water for irrigation – from individual/ community irrigation structure

      i. Kharif

      ii. Rabi

      iii. Summer

   c. Area sown

      i. Kharif

      ii. Rabi

      iii. Summer

   d. Crop productivity (Yield/Ha)

      i. Kharif

      ii. Rabi

      iii. Summer

   e. No. of crops per year-(increase from single crop to double crop or more)

   f. Change in cropping pattern:

   g. Introduction of new crops/crop varieties

h. Any change in ground water condition? (2017 – 2020)

i. Drinking water availability, accessibility (non-drying of hand pumps/ wells)

j. Effect on water flow in river/ streams

k. Any change in the grazing area available in the village commons

l. Change in no. of cattle/animals in the village

m. Change in the productivity of the animals – milk in litters per cattle

Annexure 3 Process and Outcome Indicators

PROCESS INDEX	OUTCOME INDEX
No of Workshops with block officials	Number of habitation conservation plans laid
No of Workshops involving multiple actors (academia, CSO, Govt. officials, individuals, elected representatives etc.)	Commons brought under community conservation (in ha)
No of Government officials trained	Representative sites selected for ecological monitoring
No of NGO officials trained	No of conservation plots selected for ecological monitoring
No of Habitations organised (VI formed)	Amount leveraged for ecological restoration (Rs Lakh)
No of Habitations surveyed	No of House Holds having access to social security schemes
No of federations/MAP crafted at landscape level	Percentage increase in Number of Households benefitted indirectly
No of Gram Panchayat members trained	Percentage increase in cattle/livestock
No of campaigns organized	Percentage increase in income
No of Village Institutions Committee Members and other community members trained	Percentage increase in sources of Income
No of CRP recruited	Percentage increase in schemes and benefits at Household level
No of CRPs and volunteers trained to undertake large scale capacity building programmes	Percentage increase in Mandays under MNREGA
No of habitation conservation plans developed	
No of village institutions accessing tools and applications	

ANNEXURE 4

Glimpses of Field Sites