Sustainable Development of Climate Change Resistant Livelihoods among Sauria Paharia of Sunder Pahari Block, District Godda, Jharkhand

An Impact Study

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Preface

Badlao Foundation, a civil society organization of long standing has been working among the Santhal and Paharia tribes of Santhal Pargana for decades and has made a difference in their living conditions through planned intervention.

In 2013, the organization started a project on sustainable development of livelihood, for improving living conditions, of Sauria Paharia of Sunderpahari block of Godda district. The project, which was funded by K.K.S. Germany, continued for a period of more than four years.

A baseline survey was conducted in 2014 to collect household data on demographic and socio-economic situation of Sauria Paharia before implementing the project. Similarly, an impact survey was carried out at the end of the project in January-February, 2018 to assess and measure the changes, if any, in the population characteristics resulting from project intervention.

In addition to the data gathered through the two surveys, the Annual Progress Reports for the years 2015, 2016 and 2017 prepared by the Project team have been utilized to prepare the Impact Study Report. Interaction with the project team and the Sauria Paharia beneficiaries, particularly members of SHG and Watershed Committees has helped to fill gaps in information and enrich the report.

Bajrang Singh, Founder Secretary of the Organization, who mooted the idea of writing this report and mobilized me to accomplish this arduous task, has given me the benefit of his wisdom, knowledge and experience in designing the report. He has very kindly written a befitting foreword highlighting significance of the study.

Dr. S.P. Jaiswal of ANSISS Patna designed the frame work for and got data processing, tabulation and analysis done through computer meticulously.

It has taken rather long time for me to complete the final report. I still continue to write the report in my own hand rather than learning computer typing. The report has gone through two drafts before final typing. However, I have enjoyed writing and correcting the drafts again and again for the sake of clarity in expression.

Shailza Sharma has taken all pains to type and produce the final draft in record time. She has carefully formated the report with insertion of numerous tables at appropriate places.

I am grateful to Bajrang Singh, Dr. S.P. Jaiswal and Shailza Sharma for directly contributing to the writing and completing of this report. I am also thankful to Dr. Y.L. Das and Dr. D.K. Srivastava for their valuable comments on the report.

I also express my gratitude to Rajesh Yadev, zonal manager, Godda zone, C.S. Jana, Coordinator and the team members of KKS project, people of Sauria Paharia villages and all other Stakeholders whose support was of great value at different stages of the study.

I am grateful to management of BITM, Ranchi to put its faith in me by assigning the present study.

I am indebted to members of my family, particularly my wife, for taking special care of my health and enable me to be physically fit and mentally free to accomplish the study.

Manohar Lal

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बदलाव फाउंडेशन अपने स्थापना काल से समाज के अविकसित/अल्प विकसित/अभिवंचित वर्गों के विकास का सपना सजाए हुए उनके सामाजिक–आर्थिक बदलाव के लिए कार्य करता रहा है। अपने इसी प्रयास के तहत उसने झारखंड प्रदेश के गोड्डा जिला में अवस्थित अति पिछड़ा प्रखण्ड सुन्दरपहाड़ी के 'सौरिया पहाड़िया' आदिम जनजाति के बीच कार्य करना प्रारंभ किया। संस्था ने काल केबुल स्टीफटंग (के.के.एस.) के सहयोग से एक प्रकल्प की शुरूआत की जिसके तहत इस समुदाय के समन्वित विकास के लिए बहुआयामी प्रयास प्रारंभ किया। इस परियोजना के तहत झारखण्ड के गोड्डा जिला के सुन्दरपहाड़ी प्रखण्ड के आठ 'सौरिया पहाड़िया' जनजाति गांवों के जिन 330 परिवारों का बेस लाइन सर्वे 2014 में किया गया था अब 2018 में उन्हीं गांवों के परिवारों का चार साल बाद परियोजना में किये गये कार्यों के प्रभाव का अध्ययन करना था।

बेस लाईन सर्वे से कुछ चौकाने वाले तथ्य सामने आये थे। सर्वे के ड्राफ्ट रिपोर्ट पर चर्चा के लिए रांची के बीआईटीम (बदलाव इंस्टीच्यूट ऑफ ट्रेनिंग एण्ड मैनेजमेंट) के हॉल में दिनांक 7 अक्टुबर 2015 को एक दिवसीय कार्यशाला का आयोजन किया गया जिसमें मानवशास्त्री, अर्थशास्त्री, मीडिया एवं स्वैच्छिक जगत के चर्चित हस्तियों ने भाग लिया। स्थानीय दैनिक अखबारों एवं पत्र–पत्रिकाओं में इस सर्वे प्रतिवेदन के निष्कर्षों को आधार मानकर प्रमुखता से सौरिया पहाड़िया जनजाति की परिस्थिति के विषय में खबरें प्रकाशित की। नतीजतन झारखण्ड विधान सभा के कई सदस्यों ने इसे गंभीरता से लिया और विधान सभा में सौरिया पहाड़िया सहित प्रदेश के सभी आदिम जनजातियों की दुर्दशा के ऊपर सवाल उठाये। फलतः उनके दशा में सुधार हेतु सरकार को विधान सभा के पटल पर आदिम जनजाति विकास प्राधिकार और पारिवारिक पेंशन की घोषणा करनी पड़ी। सरकार ने विधान सभा में दिये गये आश्वासन के आधार पर राज्य के सभी आदिम जनजाति परिवारों को प्रत्येक माह वितीय वर्ष 2016–17 से छह सौ रुपया मासिक पेंशन देना शुरू किया, वहीं विकास प्राधिकार के गठन की भी घोषणा की। सरकार ने राज्य की दस आदिम जनजातियों की स्थिति में सुधार का आश्वासन दिया तथा उनके विकास के लिए अलग से हस्तक्षेप की रणनीति पर काम करना प्रारंभ किया। बेस लाइन सर्वे से उभरे तथ्यों को लेकर आयोजित कार्यशाला का सरकार के ऊपर यह सकारात्मक प्रभाव पड़ा।

वहीं स्वैच्छिक संस्था बदलाव फाउण्डेशन ने बेस लाइन सर्वे के आधार पर इन आठ गांवों के 330 परिवारों के साथ जर्मनी की संस्था कार्ल कुबेल स्टीफटंग (के.के.एस.) की आर्थिक मदद से जलवायु में हो रहे परिर्वतन को ध्यान में रखते हुए बदलते परिवेश में उनकी आजीविका को बेहतर बनाने का कार्य प्रारम्भ किया। संस्था के लिये भी यह एक बड़ा चुनौतीपूर्ण काम रहा। गांवों के पहाड़ की ऊंची चोटियों पर स्थित होने के कारण उन तक पहुंचना समतली क्षेत्र के कार्यकर्त्ताओं के लिए आसान नहीं था। परियोजना में दर्शाये गये मानव संसाधनों की शैक्षणिक योग्यता वाले व्यक्ति की उपलब्धता क्षेत्र में संभव नहीं थी। इसलिए सिर्फ समन्वयक, सह–समन्वयक के अतिरिक्त सभी फिल्ड वर्कर पहाड़िया समुदाय के बीच से ही चयनित किये गये। उन्हें पूरी तरह प्रशिक्षित कर कार्य में लगाया गया। फिर भी परियोजना, अपनी निर्धारित अवधि तीन साल में, पूरी नहीं हो सकी। दाता संस्था को एक साल का अवधि बढ़ानी पड़ी। परियोजना अवधि में तीन चार समन्वयक बदले। एक मात्र सहायक समन्वयक जो काफी कर्मठ और श्रमशील थे परियोजना के आरम्भ से अन्त तक टिक सके। झारखण्ड के ऐसे बीहड़ क्षेत्र में पूर्व से उन्हें काम करने का अनुभव था तथा वे स्वयं आदिवासी समाज से आते थे।

सौरिया पहाड़िया का विकास इतना आसान होता तो कब का उनका विकास हो गया होता। आजादी के बाद से ही इनके विकास के लिए सरकारी एवं स्वैच्छिक, दोनों तरह के प्रयास, प्रयास प्रारम्भ किये गये। सरकार ने इनकी सघन आबादी वाले जिलों में पहाड़िया कल्याण समिति का गठन किया, वहीं संताल परगना की अग्रणी

स्वैच्छिक संस्था संताल–पहाड़िया सेवा मंडल ने आजादी के बाद के तीन चार दशकों तक पूरी सक्रियता से कार्य किया। संस्था ने दुर्गम इलाके में 1960 के दशक में दर्जनों प्रसार केन्द्र स्थापित किये। तत्कालीन मुख्यमंत्री श्री विनोदानन्द झा ने अपने भारी शरीर को लेकर चन्दना के उन पहाड़ों पर जाने का प्रयास किया जहां पर पहाडिया बसे थे। प्रारम्भ से सरकार का प्रयास रहा कि पहाड़िया जनजाति को दुर्गम पहाड़ों से उतारकर उन्हें समतली क्षेत्र में बसाकर उनका विकास किया जाये। वहीं स्वैच्छिक प्रयास ठीक इसके विपरीत इस अवधारणा पर रहा कि पहाड़िया जहां बसे हैं वहीं पहुंचकर उनकी स्थिति में सुधार लाना संभव है। लाख सरकारी प्रयास के बाद भी पहाड़िया समुदाय पहाड़ से नीचे उतर कर बसने को तैयार नहीं हुआ। स्वैच्छिक प्रयास जो हुए वह उनकी समस्याओं के सागर में बूंद के समान साबित हुआ। उनकी स्थिति में बहुत अन्तर नहीं आ सका।

ऐसे समाज में जहां गरीबी घनी भूत हो, अशिक्षा और सेहत का कोई इंतजाम न हो, पेय जल के लिए महिलाओं को मीलों पहाड़ की पगडंडियों पर चलना पड़ता हो, वहां की आबादी को साथ करके उनकी भलाई का कार्य करना भी आसान नहीं है। पहाड़ के ऊपर में बसी इस आबादी के बीच आधारभूत संरचना का निर्माण (इन्फ्रास्ट्रक्चर क्रियेट करना) और भी कठिन कार्य है। ईंट, बालू, पत्थर, सिमेंट पहाड़ की चोटियों पर पहुंचाना दुरूह कार्य है। यही नहीं उनकी माली स्थिति और कुपोषण के कारण उनसे श्रम के रुप में सहयोग की अपेक्षा भी नहीं होती।

बदलाव ने इस चुनौती पूर्ण कार्य को स्वीकार किया और सफलतापूर्वक इस परियोजना को सम्पन्न किया। परियोजना के कार्यान्वयन के कारण उनकी आजीविका में क्या और किस तरह की तबदीली आयी उसे समझना जरूरी था। बीआईटीएम, रांची ने महसूस किया कि बदलाव फाउण्डेशन ने विषम परिस्थिति में जोखिम उठाकर इस परियोजना का कार्यान्वयन किया है तो उसके प्रभाव का अध्ययन जरूरी है। विगत जनवरी–फरवरी 2018 में बीआईटीएम की कार्यकरिणी परिषद् के माननीय सदस्य और चर्चित मानवशास्त्री डा0 मनोहर लाल जी ने इस गुरूतर दायित्व को स्वीकार किया। परियोजना कर्मियों की मदद से आंकड़ा इक्कठा किया गया। बेस लाइन सर्वे और प्रभाव अध्ययन के आंकड़ों के आधार पर तुलनात्मक अध्ययन किया गया। प्रभाव अध्ययन से जो मुख्य बातें निकल कर आयी वे हैं–

- जल संग्रहण के ढाचों के निर्माण, भूमि समतलीकरण, गुरूत्वाकर्षण प्रवाह ढांचा (Gravity Flow Structure) के निर्माण के कारण श्रम दिवस का सृजन हुआ। महिला पुरूषों को न्यूनतम मजदूरी मिली जिससे उनकी आजीविका पूर्व की तुलना में बेहतर हुई। 60 एकड़ जमीन में सिंचाई की नई सुविधा प्राप्त हुई। भूमि समतलीकरण के कारण खेती योग्य भूमि के 320 एकड़ रकवा (क्षेत्रफल) में वृद्धि हुई। परियोजना की ओर से बीज और खाद का सहयोग प्राप्त होने के कारण खेती योग्य सभी तरह की जमीन में खेती की गई। पहले से अधिक अनाज का उत्पादन हुआ। तीन सौ किसानों को खेती–बाड़ी का प्रशिक्षण दिया गया।
- रूफ वाटर हार्वेस्टिंग टैंक के निर्माण के कारण किचेन गार्डेनिंग की अवधारणा से पहाड़िया समुदाय रू–ब–रू हुआ। भोजन में सब्जी के अंश में बढ़ोत्तरी हुई जिससे कुपोषण बहुत हद तक दूर हुआ।
- ग्रेविटी फ्लों के कारण गोगा गांव के 100 लोगों को पेयजल उपलब्ध हुआ। वही पांच गांवों के 10 पेयजल कूपों का जीर्णोद्वार किया गया। पेयजल की किल्लत में कमी आयी।
- परियोजना के आठ गांवों के 330 परिवारों में सोलर लैम्प की आपूर्ति के कारण उनका घर रौशन हुआ। रात्री में खाना पकाने, बच्चों को पढ़ाने तथा सर्प–बिच्छुओं से बचाव में मदद मिली।
- मोबाईल चार्ज कराने के लिए उन्हें नीचे के गांवों की दुकानों में पैसा देना पड़ता था। सोलर लैम्प से एक और अदभूत कार्य हुआ, जिसकी कल्पना नहीं की गई थी। इसका इस्तेमाल उन्होंने मोबाईल चार्ज करने के लिए भी किया।

- इसके पूर्व परियोजना पूर्व रोशनी के लिए किरासन तेल की ढिबड़ी के अतिरिक्त उनके पास दूसरा कोई विकल्प नहीं था। सोलर लैम्प ने रोशनी का बेहतर विकल्प दिया। कार्य समय बढ़ गया।
- लोगों की आमदानी बढ़ाने के लिए बकरी और मुर्गी पालन में भी परियोजना ने सहयोग किया। 50 परिवारों को देसी नस्ल की बकरियां दी गईं।
- महुआ और तसर कोकुन खरीदने और बेचने के व्यवसाय के लिए 13 परिवारों को तथा रोजमर्रा के इस्तेमाल की चीजों की खरीद–बिक्री के लिए किराना दुकान खोलने के लिए 9 लोगों को वित्तीय सहयोग प्रदान किया गया। यह प्रयास इसलिए किया गया कि उनमें उद्यमियता का विकास हो तथा महाजनों पर से निर्भरता कम हो।
- चूल्हे के धुएं से निजात दिलाने के लिए 295 परिवारों के घरों में निर्धुम चुल्हे निर्मित किये गये। इससे गृहणियों को धुएं से निजात मिली और उससे उत्पन्न होने वाली स्वास्थ्य समस्याओं में कमी आयी तथा लकड़ी का कम उपयोग संभव होने से वनों के कटान में कमी आई। कार्बन उत्सर्जन में कमी आयी। पर्यावरण और जलवायु की समृद्धि की दिशा में काम हुआ।
- पहाड़िया महिलाओं को स्वयं सहायता समूह के रूप में संगठित किया गया। महिलाओं ने पहली बार समूह में बैठना, संचय करना, समूह में एकत्रित धन से ऋण लेना और उसे वापस करना सीखा। कुल अठारह में आठ समूहों को सरकारी विभाग और नाबार्ड से भी सीड़ मनी के रूप में सहयोग प्राप्त हुआ। इस धन राशि से आपसी लेन–देन के कारण पहाड़िया के ऊपर होन वाले महाजनों के प्रभाव में कमी आयी।
- परियोजना के माध्यम से गांवों में बनाये गये ढांचों की देखरेख एवं मरम्मति के लिए जल संग्रहण समिति का गठन किया गया। समिति के सदस्यों को प्रशिक्षित किया गया। परियोजना के प्रत्येक गांवों में एक ऐसे व्यक्ति का चयन किया गया जो कि समुदाय के संदर्भ व्यक्ति के रूप में कार्य कर सकेंगे। इन्हें भी प्रशिक्षित किया गया।

परियोजना के प्रभाव के अध्ययन से यह बात निकलकर आयी कि उनकी आय में वृद्धि हुई है। प्रति परिवार औसतन आय में 10 से 50 प्रतिशत की वृद्धि हुई। गांवों में निर्मित होने वाली संरचना (इन्फ्रास्ट्रक्चर) से उन्हें काम मिला, खेती योग्य भूमि में बढ़ोत्तरी और सिंचाई की सुविधा उपलब्ध होने के कारण अनाज के उत्पादन में बढ़ोत्तरी हुई, आय सृजन के लिए बकरी पालन, मुर्गी पालन, किराना के दुकान जैसी गतिविधियों का प्रभाव भी उनकी आय पर हुआ। महाजनों से ऋण लेने के कारण ब्याज में जो राशि उनके हाथ से निकल जाती थी उसमें भी कमी आयी। इस बीच पारिवारिक पेंशन योजना के प्रारभ्भ होने के कारण उनके हाथ में कुछ अतिरिक्त पैसे आने लगे। इन बढ़ी हुई आमदनी का इस्तेमाल उन्होंने वस्त्र एवं आवास की स्थिति को बेहतर करने में किया। सरकार की किसी तरह की आवास योजना अभी उनतक नहीं पहुंची है, नही ंतो आवास की स्थिति और भी बेहतर हो सकती थी।

बेस लाइन सर्वे में कार्यशील उम्र के पुरूषों में मौसम के हिसाब से पलायन की स्थिति थी। गांव में रोजगार के अवसर प्राप्त होने के कारण पलायन की स्थिति में कुछ सुधार हुआ। प्रभाव अध्ययन से यह बात साबित होती है। खाद्य सुरक्षा की दृष्टि से भी उनकी स्थिति पहले से बेहतर हुई। वहीं सरकार की कल्याणकारी योजनाओं तक पहुंच बनाने में उन्हें मदद मिली।

परियोजना की गतिविधियों में शिक्षा और स्वास्थ्य सीधे तौर पर शामिल नहीं था, इसलिए इनके प्रभाव को सूक्ष्म तरीके से जानने का प्रयास नहीं किया गया। लेकिन इसकी जरूरत महसूस की गयी। यह देखने में आया कि साक्षरता दर में बढ़ोत्तरी हुई है। औसतन साक्षरता दर 4 प्रतिशत से बढ़कर 25 प्रतिशत हो गयी है। लेकिन यह सुन्दरपहाड़ी प्रखण्ड की साक्षरता दर (27%) से कम है।

इस सर्वे से सबसे संतोषजनक बात यह उभर कर आयी कि इस क्षेत्र में पहाड़िया जनजाति की आबादी भी अन्य जनजातियों की तरह ही सालाना 2.1 प्रतिशत की दर से बढ़ रही है। इनकी घटती जनसंख्या वृद्धि दर या स्थिर आबादी चिंता का विषय बनी हुई थी। अभी भी हम यह कहने की स्थिति में नहीं है कि जहां इस तरह की परियोजनाएं नहीं चल रही हैं वहां की आबादी भी इसी तरह बढ़ रही होगी। इन चार वर्षों में इन आठ गांवों में 328 परिवारों की संख्या अब बढ़ कर 339 हो गयी है। इन चार वर्षों में 121 पुरूष तथा महिलाओं की संख्या में बढ़ोत्तरी हुई है। यह बहुत ही सकारात्मक संकेत है।

किन्तु लिंग अनुपात में बढ़ता अंतर एक नकारात्मक घटना हैं, चिंतनीय है। इस आंकड़े को पुनः जांचने की जरुरत है। इसी तरह पहाड़िया जनजाति जो कि अपनी धर्म और संस्कृति के प्रति अटूट आस्था रखती है उसमें धर्मान्तरण की शुरुआत भी चिंता का विषय हो सकता है। झारखण्ड सरकार ने धर्मान्तरण को अपराधिक कार्य घोषित किया है। हो सकता है भविष्य में सरकार की इस पहल से धर्मान्तरण की प्रवृति पर रोक लगे। यह निहायत ही निजी और संवेदनशील मामला है। सरकार को भी दलगत राजनीति से ऊपर उठकर इस विषय पर कदम उठाना चाहिए।

सौरिया पहाड़िया के विकास को गति देने में के.के.एस. के सहयोग की हम हृदय से सराहना करते हैं। साथ ही प्रभाव अध्ययन के कार्य में सहयोग प्रदान करने वाले स्थानीय लोगों, संबंधित पदाधिकारियों/कर्मियों एवं मित्रों को भी मैं धन्यवाद देना चाहूंगा।

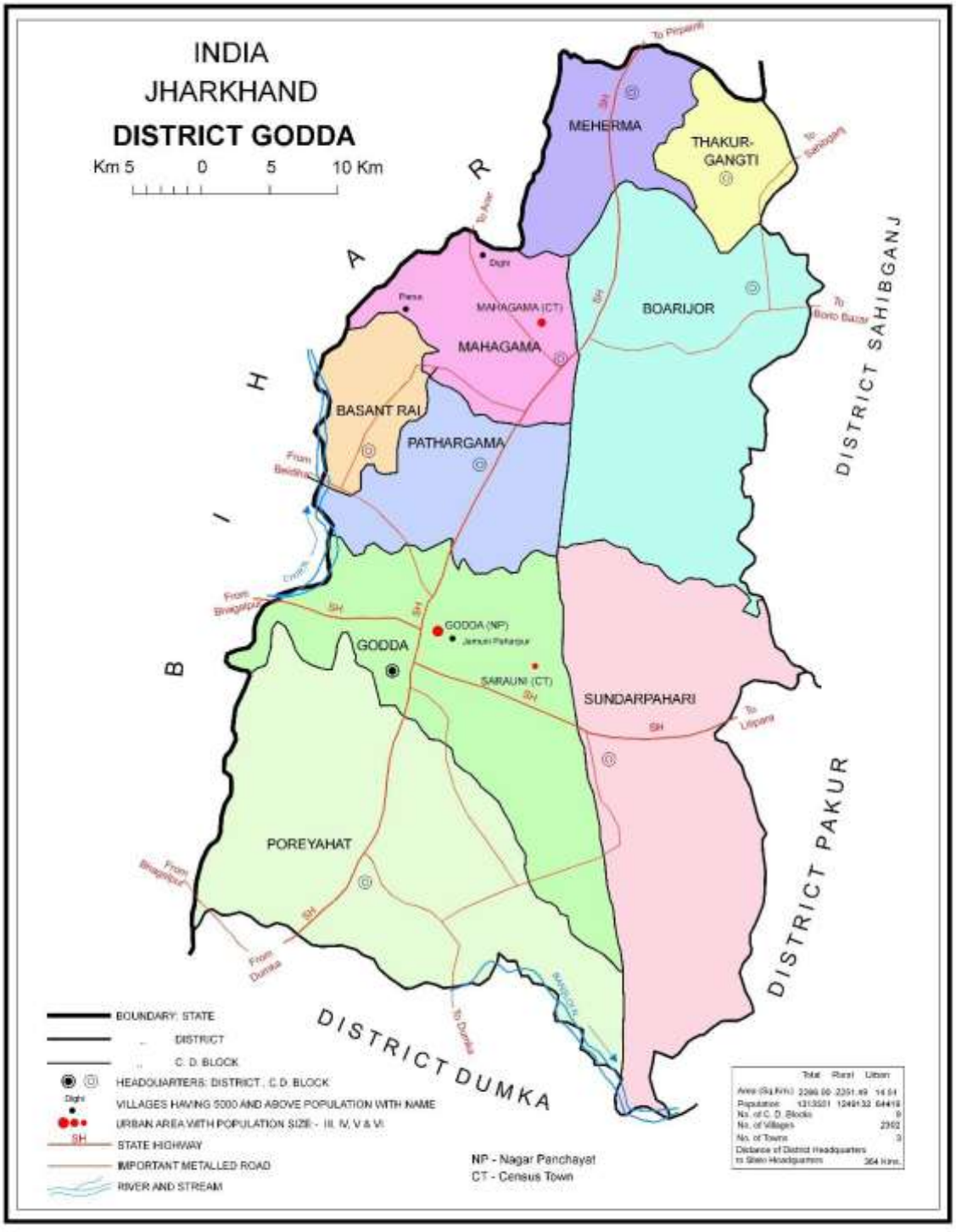
इस प्रभाव अध्ययन को बहुत ही संजीदगी के साथ सम्पादित करने के लिए डा. मनोहर लाल और टेबुलेशन एवं टाइपिंग वाली उनकी टीम को बीआईटीएम की ओर से बहुत–बहुत आभार। हाल के वर्षों में सौरिया पहाड़िया के जीवन को बेहतर बनाने के लिए इस तरह की परियोजना का कार्यान्वयन और उसके प्रभाव का अध्ययन का नमूना हमें नहीं मिलता। डा. मनोहर लाल के नेतृत्व में बीआईटीएम की ओर से किये गये प्रभाव अध्ययन के इस सार्थक प्रयासो की हम प्रशंसा करते है। साथ ही बदलाव फाउण्डेशन से अपेक्षा करते हैं कि उन आठ गांवों के पहाड़िया परिवारों की जिन्दगी को और भी उन्नत और खुशहाल बनाने की दिशा में अपने प्रयास को जारी रखे। पहाड़िया बहुल संथाल परगना प्रमंडल का यह पूरा क्षेत्र विकास सूचकांक की दृष्टि से अत्यन्त पिछड़ा हुआ है, वहीं प्राकृतिक संसाधन और खनिज की दृष्टि से भरापूरा है। सिर्फ प्राकृतिक संसाधनों की दोहन की दृष्टि से किये जाने वाले विकास से प्रकृति प्रेमी जनजातियों एवं आदिम जनजातियों का विकास संभव नहीं है। इससे तो वे विनाश के ही शिकार होंगे। इस प्रभाव अध्ययन की प्रसांगिकता तब और बढ़ जायेगी जब सरकार या कोई स्वैच्छिक संस्था पहाड़िया जनजाति या उनके क्षेत्र के विकास की योजना बनाने के लिए उत्सुक होगी।

यह अध्ययन साबित करता है कि सौरिया पहाड़िया के बीच विकास कार्य चुनौतीपूर्ण और कठिन जरुर है लेकिन असंभव कतई नहीं है। इनके बीच कार्य करने में कार्यकर्ताओं में अधिक करुणा, संवेदनशीलता और प्रतिबद्धता की जरुरत है। नौकरी की मानसिकता से उनके बीच कार्यकर्त्ताओं का टिकना संभव नहीं है। उनके बीच कार्य करने के लिए सेवा और समर्पण की भावना होनी चाहिए और प्रतिबद्धता के साथ कृत संकल्पित होकर उनके सर्वोत्मुखी विकास का बहुआयामी प्रयास तब तक रखने का नितान्त आवश्यकता है जब तक कि वे अपने पैरों पर खड़े न हो जाएं और संधारणीय विकास (Sustainable Development) की ठोस स्थिति को प्राप्त न कर लें।

मुझे आशा है कि जब तक सौरिया पहाड़िया समुदाय के समुचित विकास के लिए सहयोग एवं समर्थन की आवश्यकता है स्थानीय, राष्ट्रीय, अंतर्राष्ट्रीय स्तर की संस्थाएं सामाजिक सरोकार की भावनाओं से और सरकार अपने कल्याणकारी और सामाजिक न्याय के आदर्शों के पालनार्थ अनवरत सहयोग प्रदान करते रहेंगे। इस प्रभाव अध्ययन के निष्कर्ष/कार्यकारी सारांश के अवलोकन से सौरिया पहाड़िया के बीच विकासात्मक गतिविधियों की भावी योजना बनाने और नई दिशा देने में नीतिकारों और हितभागियों को निश्चय ही मदद मिलेगी ऐसी मेरी दृढ़ मान्यता है।

Map of Jharkhand

District Wise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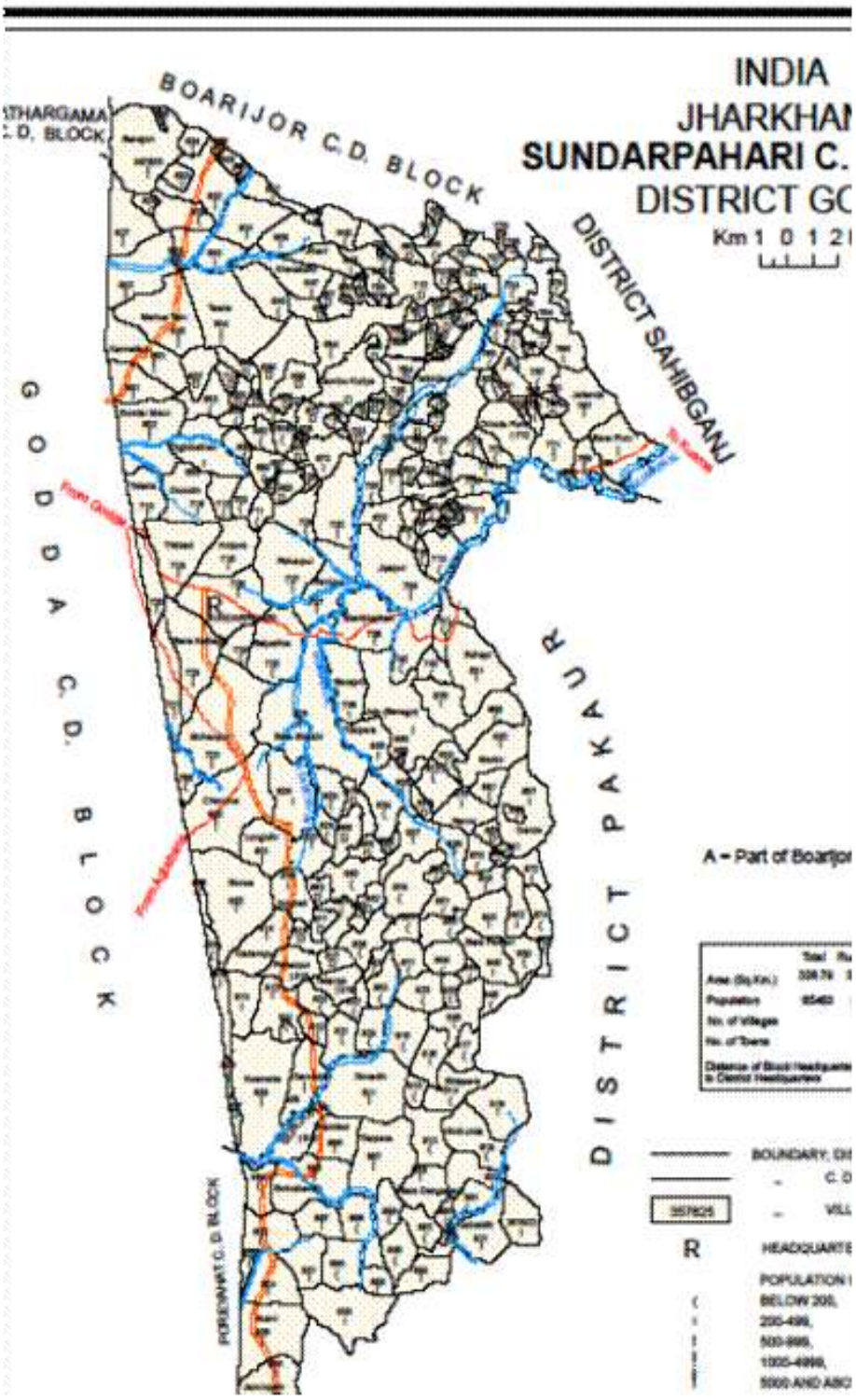
PATHARGAMA
GODDA (NP)
GODDA
SARAUNI (CT)
SUNDARPAHARI
POREYAHAT
DISTRICT SAHIBGANJ
DISTRICT PAKUR
DISTRICT DUMKA
BOUNDARY: STATE
DISTRICT
C. D. BLOCK
HEADQUARTERS: DISTRICT, C.D. BLOCK
VILLAGES HAVING 5000 AND ABOVE POPULATION WITH NAME
URBAN AREA WITH POPULATION SIZE :- III, IV, V & VI
STATE HIGHWAY
IMPORTANT METALLED ROAD
RIVER AND STREAM
NP - Nagar Panchayat
CT - Census Town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CONTENTS

Executive Summary

Development of developing economy like India is indeed socio-economic development of rural economy because most of the Indian population lives in rural areas. In brief, one can say that process of development refers to the process of rural development. Similarly, development of tribal population refers to primarily the development of tribal's traditionally residing in rural/remote settings.

Through generation, the tribal's have suffered from severe socio-economic disabilities such as poverty, backwardness in terms of literacy/education, health, awareness, participation in decision making process, in socio-economic and political process. Consequently, they have been subjected to extreme exploitation and deprived of legitimate benefits of the on – going development/welfare programmes. They have fallen in the bad trap of vicious circle of poverty, indebtedness, dependence and actute under development.

The primitive tribes like Sauria Paharia of Santal Pargana in Jharkhand has experienced deprivation and exploitation more than other neighbour how major tribes like Santals.

Badlao Foundation (BF) has been working among the tribals of Santal Pargana in Jharkhand for more than three decades with the mission of participatory development and social transformation of these people.

The Project

The current project on sustainable development of livelihood opportunities, executed by the B.F., was funded by KKS Germany. The term of the project was for 3 years between 2013–2016 and extended for another year till 2017. The project covered entire population of 328 BPL Sauria Paharia households of targeted 8 villages of Sunderpahari block of Godda district. The villages are Champa, Tamligora, Dumarkajri, Liladhoni, Goga, Senakatar, Telvitta and Dandagora.

Table - Village and Sex Wise Distribution of Household Population 2014.

S.No.	Village	Panchayat	No. of Households	Household Population		
				Male	Female	Total
1.	CHAMPA	PAHARPUR	17	35	43	78
2.	DANDAGORA	KAIRASOL	59	131	117	248
3.	DUMAR KAJRI	"	25	51	58	109
4.	GOGA	"	19	42	47	89
5.	LILADHONI	"	15	28	32	60
6.	SENA KATAR	"	24	51	50	101
7.	TALVITTA	"	92	187	176	362
8.	TAMLIGORA	"	77	174	198	372
ALL			328	699	721	1420

The Objectives

The project aimed at enabling the Sauria Paharia population to enjoy improved living conditions by engaging in climate resistant livelihood opportunities and improved access to government services.

The intermediate objectives were to increase the income and food security, improve the basic facilities regarding safe drinking water, and renewable energy sources for cooking and light. It will also enable women to take up other income generation activities (through SHGs) for food security. It will also ensure community participation in utilizing and managing the community assets and resources through Water Shed Committees.

The Strategy

The project was implemented through the instrument of Self Help Structures (SHGs & Watershed Committee), created in the project villages in four years between 2013 to 2017.

Major Components of the Project

a). Component I – Sustainable utilization of natural resources, eco friendly agriculture practices and supplementary income generation activities based on animal husbandry and NTFP.

b). Component II – Sustainable and secure source of drinking water and renewable energy saving devices for cooking and lighting.

c). Component III – Promotion of Self Help Structures and linkages with PRIs.

Various type of activities were carried out under each component to achieve the stated targets within a period of three years (extended for one more year). In addition to expecting immediate concrete outputs of different civil work activities, long term benefits of the project were envisaged on the population and ecosystem of the project area.

Component-wise Major Activities and Achievements

Component 1 – Natural Resource Management, Sustainable Agriculture Practices and other Income Generation Activities.

I. Natural Resource Management (Soil and Water Conservation), (Selected Locations).

(1) Land Levelling (91.81 Ac / 114.5 Ac = 80%)
(2) C.C.T (27.80 Ac / 55 Ac = 50%)
(3) Weir – Check Dam (1/1 = 100%)
(4) Jalkund (1/1 = 100%)
(5) Spring Well (3/3 = 100%)
(6) Water Recharge Tank (1/1 = 100%)

II. Agriculture – Sustainable Agriculture (in 320 Acre land of 8 villages).

(1) Training to Farmers on

- Compost Making
- Integrated Pest Control
- Seed & Grain Management
- Animal Husbandry
- Tree Plantation

(2) Distribution of Seeds/Inputs.

(3) Promotion of Vegetable production

- In the field (Irrigated through newly built WHS)
- In Kitchen Garden (Through RTRWH tank)

(4) Tree Plantation.

III. Supplementary Livelihood Activities

(1) Animal Husbandry

- Goatery

(2) NTFP

- Cocoon rearing
- Mahua Collection
- Salleaf Collection

(3) Petty Business

(4) Fishery

Component 2 – Basic Facilities

I. Renovation of D.W. Wells (10 wells in villages 10/10 = 100%)

II. Promotion of Smokeless Chullah (293/300 = 97.67%)

- Orientation
- Installation & Usage

III. Promotion of Solar Lamps (All 330 Households)

- Orientation
- Distribution & Usage

IV. Promotion of Roof Top Rain Water Harvesting (97/100 = 97%)

- Installation & Usage
- Kitchen Garden

Component 3 – Promotion of Self Help Structure and Linkage with PRI.

I. Self Help Group (SHG) – Including Linkages (18 against target of 8).

- Orientation, Training and Meetings of SHGs

II. Water Shed Committees (WSC) – Including Linkages (8/8 = 100%).

- Orientation
- Meetings

III. Construction and Utilisation of Community Centre (1/1 = 100%).

Impact Study of the Project

Baseline Survey – January – February, 2014.

Impact Survey – January – February, 2018.

Results – Changes resulting from implementation of the Project (2014-2018)

Socio – Demographic Changes

I. Number of Households increased from 328 to 339 in number. Between 2014-18
II. HH Population increased from 1420 persons in 2014 to 1541 persons in 2018 @ of 2.1% per year.
III. Literacy rate = 25%
    - Male literacy rate increased from 5% to 34.40%
    - Female literacy rate increased from 3% to 14.87%
    - Majority of educated male and female population attend upto VIII standard.

Impact on Livelihood and other Living Conditions

Such as –

- Clothes and Garments
- Housing Situation
- Wealth and Land Holding
- Live Stock
- Household Assets
- Health Situation
- Utilisation of Health Services
- Status of Women
- Rights and Entitlements
- Benefits from the Project

Impact on Annual Family Income and Economic Status

One of the specific objectives of the project was to improve the economic status and increase current annual family income of Sauria Paharia by 10 percent.

As a result of various activities carried out for livelihood promotion, the average annual family income of Sauria Paharia increased by 50% (against planned increase of 10%) over the earlier income level. The rate of increase in income varied from village to village in the project area.

The economic status of households has also improved during the project

period. The percentage of households in higher income category (>Rs. 25000/-) has gone up from 10% to 50% in between 2014 to 2017. The major contributors to improvement in family income and economic status were efforts for soil and water conservation and NTFP respectively.

Impact on Migration - Another objective of the project was to reduce migration among the Sauria Paharia by providing them sustainable livelihood opportunities in the villages. Earlier, large number of men of working age groups of the project area used to seasonally migrate to other places in search of employment.

Due to major interventions for soil and water conservation, sustainable agriculture and other income generation activities including NTFP, massive employment and wage earning opportunities were created in the project area between 2014–2018. As a result, the number of persons migrating to other states during the lean agricultural season has reduced significantly due to availability of employment in their own villages.

Majority of the respondents have also confirmed that rate of migration of people from project villages has declined during the project period as compared to earlier times.

Impact on Food Security

An important objective of the project was to reduce food insecurity among the Sauria Paharia through sustainable utilization of natural resources and sustainable agricultural practices. As a result of these activities, there was increase in the acreage under cultivation, improvement in area under irrigation, support for improved seeds and inputs, training on sustainable agricultural practices, which consequently led to increase in crop production and productivity. The income from agriculture and vegetable farming contributed more than half of the average family income of the farmers. Vegetable growing is a new pursuit for the Sauria Paharia. With the improvement in irrigation facilities and support for vegetable saplings and seeds, vegetable growing has become very popular among the villagers. The consumption of vegetables seemed to have improved their nutrient intake as well as augmented their family income through sale of surplus vegetables in the market.

With the support of improved seeds and other inputs from the project, the dependence of farmers on money lenders for such agricultural loan has reduced to a large extent and saved them of exploitation and becoming victims of food insecurity.

All these efforts have resulted in food security and food sufficiency of Sauria Paharia for an additional 2-3 months at the household level. This fact has been

corroborated by the villagers. Majority of them perceived that status of agriculture, vegetable farming and food security and nutrient intake by the Sauria Paharia has improved during the project period as compared to earlier times.

The Sauria Paharia also grow variety of fruit trees. While some of these fruit trees like mango, jackfruit, palm, date palm, and sahjan grow naturally, papaya and lemon are grown by the people of their own choice. Each family possessed one to three fruit plants of different varieties. Each family has at least 10 date palm trees. In addition to consumption of fruits, their sale also helped them to supplement the family income.

Future Challenges and Opportunities

a). The significant improvement in knowledge and awareness on agriculture and vegetable farming induced through availability of water and taking up of land based interventions needs to be sustained through proper management of watershed structures and frequent orientation of farmers on sustainable agricultural practices.

b). Presence of government officials and ground level workers is limited which results in slow delivery of services in the project area. The experience has shown that community organizations like SHGs which have emerged as strong bodies have successfully availed their rights and privileges by negotiating with line departments of the government. They can be visualized to bargain further with the service providers to improve their living conditions like schools, electricity, roads, forest rights and other entitlements.

c). Further, external factors like acquisition of land by coal mine corporate and the tribal's receiving huge compensation money have disturbed project work in two villages. Such extraneous factors, if unchanged, will pose big challenge to sustain the gains of the project to the Sauria Paharia.

d). The most critical is the process of social mobilization and engagement with the Sauria Paharia. In what so ever activity their involvement has been good, the results have been sustainable as is clear from the local contribution generated for purchase of seeds.

In the context of future challenges and opportunities for overall development of the Sauria Paharia, the villagers identified and ranked the following development priorities to improve their living conditions.

Development Priority	Ranking
Water Management	1
Provision of Health Services	2
Education Facilities	3
Promotion of alternative means of livelihood	4
Land and Soil Management	5
Access to Rights and Entitlements	6

Among these six types of issues health and education sectors continue to be unattended from the pre-project times. The project did not take up these two issues because the main focus of the intervention was on promotion of livelihood opportunities through natural resource management and land based activities.

Thus, for any future intervention education and health needs of the community demand top priority and attention by the development planners. In addition, the villagers were more concerned about the sustainability of various measures taken during the project to improve the living conditions of the Sauria Paharia. The areas which require further action are management of water harvesting structures, improvement in income generation activities, land and soil management and access to rights and privileges.

1
Badlao Foundation: A Profile

The formation, functioning and development of BADLAO as a voluntary development organization, conforms its committed strive to bring a change in society that stands for socially transformed qualitative state of self-reliance based on equity and justice.

Obviously, Badlao Foundation (B.F.) was born out of a contextual necessity. During early fifties, when Maithon dam was constructed on river Barakar through Damodar Valley Corporation, 39 villages on the ridges were affected - some partially and some completely. Where houses were not destroyed, cultivable lands were submerged due to construction of that dam.

The uprooted tribals scattered all over the region, though majority of them zeroed on Mihijam, as Coalfields and Locomotive Industry etc. were nearby. When meager financial compensation exhausted - these tribals and other displaced people became marginalized and a conspicuous process of abject poverty and destitution emerged as the distinct feature of their survival.

Realizing the need to uplift and empower those deprived and marginalized people Mr. Bajrang Singh, a Social Activist with a social science background having working experience with bonded labour in Antyodya Ashram of Deoghar, (Santhal Parganas, Jharkhand), along with some of his associates started working with these displaced people. The bulk of these people were Santhals, Paharias and Bauries. As they were displaced, they did not have adequate land for cultivation and farming was not enough for their sustenance, therefore non-farm income generation activities like Tasar spinning by women were initiated. In course of time (1982) Badlao Foundation became a Registered Organization. Later on, to promote Tasar spinning it became affiliated to Khadi &Village Industries Commission (K.V.I.C.), Government of India in the year 1985.

Vision

Badlao stands for equality and equity based, gender just, socially transformed self reliant society.

Mission

Badlao Foundation endeavors to empower people for social transformation to achieve self-reliance and gender justice through participatory efforts and to ensure ecological balance. People in Badlao Foundation are committed and competent to creatively initiate and persevere on their tasks, to uphold human dignity to strive for an equitable social structure and to enable women and socially disadvantaged to claim their rights.

Core Values

- Change
- Self Reliance
- Human Dignity
- Ecological Balance
- Participatory Development
- Equality & Equity Based Society.

Target Group

Badlao Foundation has been rendering its services to rural population, especially Santhal & Paharia tribes, Dalits and other backward class people who live below poverty line in Santhal Pargana region of Jharkhand State.

Area of Operation

Badlao Foundation started its operation initially at Mihijam. After a few years of dedicated work with Santhals, Paharias and other poor people in Mihijam (Jamtara Block- Jamtara District) and general exposure to other areas of Santhal Parganas, it could realize the scope and need for addressing issues through micro-level planning in broader periphery. Hence it thought up of expanding its base for intervention. While its original operational area of Mihijam and other adjacent areas have an industrial footing, Domdih (Sunderpahari block – Godda district) is forest based and hilly, being the abode of a primitive tribe called Sauria Paharia where as Karanpura (Madhupur block- Deoghar district) is agriculture based and Machkol (Jarmundi block- Dumka district) is upland, denuded of forest cover.

Obviously the focus of actions for all these areas was different, though community organization and sustainable livelihood for food security were the major goals. In addition to general concerns on health and education in all the areas, specific attention to specific issues in all these areas was attended to. In Mihijam (Kewatjali) health and education were more focused. In Karanpura eco-friendly sustainable agriculture was the first choice. Regeneration of water and its equitable distribution was the priority area for Sunderpahari region. In Machkol area, the creation of vegetation and biomass based livelihood-system development was of utmost choice.

Activities and accomplishments of Badlao Foundation

From the very outset, Badlao Foundation had undertaken number of steps to mainstream the underprivileged and deprived masses. Over the years, it has made many self sustaining efforts to ensure holistic development of its stakeholders through multi dimensional approach. As yet, the organization has made fruitful effort in different lines of action to ensure an integrated development of the marginalized and socio economically backward people in a sustained manner.

2
Land and People
(Sauria Paharia of Sunderpahari Block of Godda District)

Jharkhand State was carved out of Bihar in the year 2000. Though the state is rich in terms of mineral resources, it has lacked behind in terms of overall development. The state economy is mainly based on primary sector with more than 78% of the population in the rural area making a living from agriculture.

Jharkhand comprises 32.9 million population with a decadal growth rate of 22.3% during 2001-11 decade. It has a density of 414 persons per square km. Sex ratio in the state is 941 females per thousand males. Literacy rate in 2011 was 68% for all persons, 78% for males and 56% for females respectively. The literacy rate also varied across districts – with a lowest of 50% in Pakur to highest of 77% in Ranchi.

One third of the total population of the state consists of tribes. There are 30 large and small tribes distributed all over the state which are at different levels of socio-cultural integration ranging from food gatherers to plain cultivators. There are 24 districts, 260 blocks, 4423 panchayats and 32620 villages in Jharkhand. There are 8 primitive tribes who reside in 2649 villages of the state. The population of primitive tribes is highest (35129) in Sahibganj district and lowest (137) in Dhanbad district respectively.

Santhal Parganas constitute north-eastern part of Jharkhand. It is one of the five divisions of the state consisting of six districts e.g. Dumka, Jamtara, Deoghar, Pakur, Godda and Sahibganj. It continues to remain one of the most poorly developed areas in the state.

Lying between 23^{o} 40’ N – 25^{o} 18’ N latitude and 86^{o} 28’ E – 87^{o} 57’ E longitude, Santhal Parganas stretches between the river Ganga on the north – east and the river Barakar in the south – west. The region can be geographically divided into three sub – regions: hilly country, rolling country and low land. Consisting of the Rajmahal and other hill ranges and valleys, the hilly country forms an almost continuous central ridge from the north to the south. In the west and south-west, rolling country consists of undulating land, in places rocky and in places covered by scrub jungle. In addition, there is a low-lying strip of alluvial land between the Ganga, Bansloi, Brahamini, Ajai and more rivers. The region is also rich in mineral deposit like china clay, fireclay, coal, quartz, silica and road metal etc.

Based on the variation in socio-cultural and economic characteristics, people in this region can be categorized into three major groups. Tribal groups, Sadaan (native non-tribals) and new settlers. The two main tribal groups in the region are Santhal and Paharia.

Santhal Parganas is well known for its distinct features of underdevelopment such as chronic food insecurity, economic stagnation, degraded natural resources, poverty, poor health and education, poor infrastructure, lack of basic amenities and poor status of women.

Godda district is one of the most backward among the six districts of Santhal Parganas. It is surrounded by Sahibganj and Pakur districts in the east, Bhagalpur district of Bihar in north & west and Dumka in the south. It is situated between 24^{o}.47' to 25^{o}.23' Northern Latitude and between 87^{o}.08' to 87^{o}.48' Eastern Longitude. Godda District came into existence on 25^{th} May 1983, after being carved out from the district of Santhal Pargana. Since 1855, Godda has been a sub-division of Santhal Pargana. The geographical area of the district is 2110.40 Sq. Km, of which cultivable land is 131140 Hect and the area covered with forest is 37172.92 Hect. The climate of the district is of diverse nature. Average rainfall of this district is 1094.9 mm. In summer, the average maximum temperature is 41^{o} C and average minimum is 28^{o}C and in winter, the average maximum temperature is 28^{o} and average minimum is 13^{o} C respectively. Rivers and Ravines Sunder, Kajhia, Harna, Tribeni, Doi, Geruwa, Kauwa, Gumani are the main rivers. None of the rivers are perennial, almost all the rivers dry up by the end of rainy season, they appear merely beds of sand with little or no water, but generally they hold sufficient water below. The whole district is having a mixed type of topography where the hills & hillocks are scattered throughout the area. Almost all the eight blocks of the district are having both hilly & plain tracks. Most of the parts of the Boarijore & Sunderpahari blocks are covered with Rajmahal hills. The district consists of 8 Community Development Blocks & 8 Revenue Circles namely Godda, Pathergama, Mahagama, Meharma, Thakurgangti, Boarijore, Sunderpahari & Poraiyahat. The total no. of Police Stations and out posts are 13 in numbers.

According to 2011, censes the population of Godda district was 13.11 Lakhs. Sex ratio was 936 females per thousands males. Literary rate in the district was 57.68% for all persons, 69.56% for males and 44.90% for females respectively. Population growth during the 2001-11 decade was 25.14%. The density of population was 622 persons per Sq. Km.

The district of Godda is one of the most backward district in the State of Jharkhand in the Santhal pargana region where there are large sections of poor and deprived Tribal people facing isolation on account of their poor economic circumstances. They are somehow leading their lives and facing many hurdles in their day to day life. Lack of proper health care and education are considered most urgent which need special attention. Poor health care, unhygienic living conditions including sanitation problems make their lives miserable. Chronic ailments and ill health are routine affairs.

Unemployment, lack of alternative means of livelihood, declining forest resources which they have been depending on put them on the road of uncertainties and starvation. The poor status of tribal children in the area evokes sympathy and concern. Most of them are underfed, malnourished and deprived of health care and education. The priority of the families to earn their livelihood provides no importance for education of children. Most of the children are, therefore, illiterate or non-school going/dropped out of school system primarily due to lack of disposable income of the parents.

Sunderpahari block in Godda district is a tribal dominated area with 92% of its population belonging to primitive tribal groups particularly Sauria – Paharia. The major parts of the block lie under north – eastern region of Godda district. The land is undulated with laterite, coarse loamy soil. There is no perennial river in the block. The climate is extremely hot in summer and very cold in winter. The rainy season is mainly brought by south – west monsoon and lasts for four months between June to September. Uncertain monsoon and drought like situation are quite frequent. The average annual rain fall is 1094.8mm. With erratic rain fall since 2002 and consequent climate charge, the whole region of Godda district, including Sunder pahari block, has experienced a great loss of flora and green cover resulting from disruptionof natural cycle of vegetation development. During the four project years, the actual rainfall was 1001.00mm in 2014, 1267.8mm in 2015, 897mm in 2016 and 915.8mm in 2017 respectively. It shows that actual rainfall was below the average annual rainfall during the prime project years of 2016 and 2017. This trend of rainfall adversely affected the production of rain fed agricultural crops in this area during this period.

3

Sustainable Development of Livelihoods and Adaptive Response to Climate Change among Sauria Paharia

- A Planned Intervention

3.1 Project Location and Problem Analysis

Location of the Project: While focusing on the broad goal of improving the life and well being of primitive tribal group, Sauria Paharia through harmony with nature in their native settlement areas in Sunder Paharia block of Godda district, Badlao Foundation has endeavoured to promote their livelihood by improving living conditions by tapping climate change resistant livelihood opportunities.

The project intervention for sustainable development of livelihoods and adaptive response to climate change was taken up in the year 2013, (with the financial support of K.K.S.) among the 330 Sauria Paharia households and the community in Sunder Pahari block of Godda district. These 330 households belonged to 8 Paharia villages of Kairasole and Paharpur panchayats of the block. All of these villages are compact and closely located to each other with a maximum distance of 3 Kms.

The Sauria Paharia population of these 8 villages has poor socio-economic status. All of them live below poverty line and lead a life of disadvantage on all fronts of life. They are mainly dependent upon hunting, food gathering, shifting cultivation, collection of minor forest produce. Since beginning they have been living in, rather depending, on the forests. With the disastrous climate change and erratic rain, their traditional means of livelihood have become quite unproductive.

Their lack of interest in seeking health services, lack of education, lack of child care are some of the basic factors of their social and cultural life which have adversely affected their survival and remain as major constraints for development.

They are largely dependent on the natural resources for their survival and their livelihood system revolves around forests, agriculture, livestock and wage labour. The agriculture is mainly dependent on rains which is erratic in nature and adversely affects the production and food security.

Less than half of the food requirement is met from their agro-production and the rest is through income from other sources like sale of fuel wood, bamboo, Sal and Tendu leaf, herbs and sale of livestock and earning from wage labour. However,

Deforestation, soil erosion, frequent droughts, seasonal shift in rainfall pattern and migration continue to force the Sauria Paharia to live in miserable conditions and deprivation.

Most of the Sauria Paharia families are in the trap of local moneylenders who charge exorbitant rate of interest. Frequently the crop they produce is taken away by moneylenders from the field itself causing great miserly to them. They are also in the grip of indebtedness mainly due to chronic household budget deficit caused by limited livelihood options.

The main causes of their poverty are the low level of literacy, lack of awareness about their entitlements, political marginalization and indebtedness resulting in alienation of land, and forced labour. Although many households do have their land, their landholdings are very small, fragments and sporadic, thus making such holdings unviable and unproductive.

The project villages are situated in difficult situation in the forest area. These remote villages are located on hill tops of mid-areas and are difficult to reach easily by any means of transport. Thus, the Sauria Paharia of these villages remain the most isolated and disadvantaged indigenous tribal group with visible depletion in their population. Malnutrition, malaria, diarrhoea are rampant in these villages and the access of these people to health services remains limited.

Community level institutional structures are almost absent in these areas. Women have rarely any voice in decision making process. The benefit of various provisions and entitlements is almost nil because of lack of access as well as demand for such provisions.

Problem Analysis and prioritization of problem areas for Intervention - The intervention area of the project i.e. Godda district and its Sunder Paharia block and the 8 project villages in particular, have distinct features of under development such as chronic food insecurity, economic stagnation, degraded natural resources, poor health and education, poor infrastructure, lack of basic amenities and above all, poor status of women. The major challenges faced by the people of this area are enumerated below.

Livelihood and Food Insecurity: Most of the people living in the region are dependent on rain fed agriculture. Primarily the small and marginal farmers belong to tribals, dalits and other backward classes. Tribals constitute one third of total population in the Santal Parganas division. However, in some blocks the concentration of tribal population exceeds 50% of the total population. Rice is the

staple food of the tribals. Even in case of good yield, food supply lasts only for 4 months. Seasonal food shortage affects every household especially those who are engaged in casual agriculture labour. Level of food shortage varies when food supplies run out to starvation condition especially among marginal farmers and land less labourers.

Economic stagnation: Most of the people are dependent on money lenders for fulfilling their credit needs despite high rate of interest charged by the latter. Subsistence agriculture, increasing population, lack of economic diversification and chronic indebtedness continues to compel the tribal community to migrate elsewhere. They are uneducated and unskilled, so they find low paid employment in brick kiln, construction site and agriculture laborer.

Decrease in natural resource base: Once the area was rich in flora and fauna, but today Godda district has the largest volume of area under open or degraded forest. At present this region suffers from acute water crisis. No serious efforts have been made to conserve the surface water. Digging of mines has caused displacement, migration and deprivation amongst the tribals and other local inhabitants. Little has percolated to the tribal and other local communities except cash compensation. In fact little attention has been paid to develop alternative skills and livelihood options suitable and relevant to these displaced communities.

Incidence of Poverty: Needless to say, stagnating agriculture, degradation of forest, lack of alternative economic opportunities, food insecurity are only manifestation of rampant poverty in Godda district. The poverty remains at highest degree among the tribals. Depletion of forest together with increasing pressure of population has resulted in a substantial reduction in the rotation cycle on the shifting cultivation practiced by primitive tribal group especially Paharias inhabiting the hills. For them it has meant hunger and widespread malnutrition and for others it creates food insecurity.

Education: Ranked 27th out of 28 states, the overall rate of literacy in Jharkhand is 54.13%. it occupies similar rank in terms of female literacy, which is only 39.38%. Although the state has its network of government primary schools but majority of these school particularly in remote tribal area are not functional. Present socio economic problems support low rate of enrollment of children in school where as the girl child suffers the most.

Health: Causes of poor health status are not far to seek. Malnutrition is rampant. Majority of women suffer from severe anaemia, half the children suffer from chronic and acute malnutrition or micronutrient deficiencies. Among the Paharia

tribals, people continue to succumb to malaria and kala-jar, diarrhoea and skin diseases. Preventive services are not accessible to the tribals. Curative health services are are also not in access due to irregularity in functioning of health centres.

Status of Women: It is generally believed that tribal women of Jharkhand enjoy better social status than their counterparts elsewhere. However, here are considerable gaps in this understanding. They occupy a subordinate position in comparison to men. In economic terms a woman is paid less. Though incidence of disease is higher amongst women, only few receive medical attention. Women are married in their teens and have their first child before twenty. Nearly 88% women suffer from moderate to severe malnutrition. More than 70% women are illiterate. Tribal women do not have the right to inherit land property. Old women and deserted women are particularly vulnerable, being subjected to mental and physical torture and humiliation.

Rationale For Intervention

To ameliorate the miserable living conditions of Sauria Paharia in Sunder Pahari block of Godda district, the Badlao Foundation launched suitable planned activities for their development in the year 2013. The basic aspects, major activities and development priorities addressed through the development project are as under:

Sno.	Basic Aspect	Major Activities	Development Priorities Addressed
1.	330 BPL Sauria Paharia families of 8 villages increase their income and food security through safeguard and sustainable use of natural resources, sustainable agricultural practices and other income generation activities based on Animal Husbandry and Non- Timber Forest Produce (NTFP).	Soil and water conservation activities, including land leveling and water harvesting structures in 320 acres of land.	Conservation and regeneration of local natural resources in sustainable manner.
2.	330 BPL Sauria Paharia families of 8 villages utilize secure drinking water for daily use and renewable energy devices for cooking and lighting.	Repair of 10 drinking water walls for year round safe drinking water. Provision of 300 Solar Lamps and 300 Smokeless Chullah and 100 Roof Top Rain water Harvesting Structures for Kitchen garden and general use.	Safe drinking water. Provision of alternative and renewable energy sources for light and cooking support. Rain water conservation as an eco-supportive alternative means of the water sourcing.
3.	Self Help Structure of 330 BPL Sauria Paharia families of 8 villages implement project activities and other development activities with the support of PRI members.	8 women SHGs formed and linked to NABARD, SGSY etc. 8 Watershed Committee formed. Common properties are created, used and maintained.	Organizing the women for income generation, for food security. Community Participation in the management of common properties.

3.2 Target Group Analysis

Criteria for selection of Sauria Paharia villages for Intervention: The project covers the entire Sauria Paharia population of 330 households in 8 villages viz. Tamligora, Telvita, Dandagora, Senakatar, Champa, Liladhoni, Goga and Dumarkajri. While Champa belongs to Paharpur panchayat, the other seven villages come under Kairasole panchayat of Sunderpahari block.

Criteria for selection of the target group were based on the fact that all of them were vulnerable and at risk because a) all belong to BPL category, b) are from vulnerable primitive tribal group that too at the point of extinction, c) live in environmentally vulnerable hilly tract area, d) vulnerable to environmental hazards, e) continue to be under the chronic risk of food and income insecurity and f) are deprived and disadvantaged because of lack of basic amenities of life.

Socio – Economic Situation of Sauria Paharia: The sources of livelihood of Sauria Paharia population are agriculture - mainly shifting cultivation, collection of forest produce, animal husbandry and wage earning. They suffer from food and income insecurity and are in dwindling state of survival. They are being exploited by money lenders exorbitantly. In fact their earnings from different sources also fluctuate from time to time depending upon the monsoon and the climate situation in their village area. Their land holdings are fragmented and mostly in upland area which makes these holdings uneconomic for cultivation.

They are quite unorganized and live sporadically in different gauntlets in the area. They are governed by their traditional organizational structures.

Participation of Sauria Paharia in planning, implementation and management of Intervention: The participatory planning process for the preparation of this intervention was started by Badlao Foundation in September, 2012. PRA map was prepared and need assessment was done by local and head office staff of B.F. under the guidance of project coordinator. The needs identified through PRA included need for solar light, eradication of chronic indebtedness, raising productivity of cow pea (Barbatti), meeting food security gap, access to drinking water, health and education facilities, MNREGA, old age pension and others. The top priority was given to the need of water for drinking, domestic use and irrigation purpose.

The Badlao Foundation involved a consultancy organization DRCSC Kolkata to make an assessment of the resource potential and resource management plan for the area which was duly incorporated in the project design.

The B.F. also involved the coordinators of its other projects in Sunderpahari block in the process of participatory planning. Engineering and agriculture experts of BF were also involved in preparing the project design. Advice of some other important institutions and experts was also taken while preparing the project design.

3.3 Project Design – (Objectives, Strategies, Activities and Outcomes)

B.F. proposed to focus on improving the living conditions of targeted Sauria Paharia population to enable them to tap climate change resistant livelihood opportunities. It will be ensured through participation of the community in the development activities in their own setting without disturbing their existing natural set up. The project focuses on livelihood promotion of 330 Sauria Paharia households of 8 villages in Sunder Pahari block of Godda through safeguard and sustainable utilization of sustainable agricultural practices and other income generating activities based on animal husbandry and NTFP.

The project aimed at ensuring overall development of the people and the environment of the project area through interventions on land, soil and water management, improving the awareness, knowledge and skill of the people, mobilizing them to have better access to and demand for entitlements and privileges and organize them to participate in the management and maintenance of common property resources created through the project.

3.3.1 Overall Objectives

- Primitive Tribal families raise their annual income.
- Migration among these families is reduced.
- Food security among them is improved by at least one month.

Project Obectives

- 330 BPL Sauria Paharia families have raised their annual income by at least Rs.2500/- (10% of their current average annual income).
- Migration is reduced by 20 days in a year from current rate of migration.
- Improved food security of the households by atleast one month as a result of increased agro production.
- Increase in yield of major crops like maize, pulses, millets and chick pea by 25%.

3.3.2 Strategies, Activities and outcomes.

Outcome 1:

330 BPL Sauria Paharia families of 8 villages will increase their income and food security through safeguard and sustainable utilization of natural resources, sustainable agricultural practices and other income generating activities based on animal husbandry and NTFP.

To achieve the above outcomes, the following activities were proposed to be undertaken.

(a) Soil and water conservation activities on 320 Acres. The soil conservation activities will include all the areas under cultivation. The Water Harvesting Structures (WHS) will be created in selected places of the cultivable areas that include: 2 Weirs, 1 Jalkund (small pond), 2 Spring Wells and 4 Water Recharge Tanks along with 24 acres of land leveling.

(b) 50 acres of hilly slope shifting cultivation area and 30 acres of area around water harvesting structures to be brought under timber and fruit bearing tree plantation. Total number of fruit trees will be about 9000 and timber trees about 16000. (Survival rate of sapling minimum 80%). The proposed plantations will be taken up exclusively on private land.

(c) 320 acres of the treated land will be used for cropping (out of it 100 acres for double cropping).

(d) 50% of target families practice at least one of the promoted sustainable agricultural practices on 100 acres of land.

(e) All the 330 Sauria Paharia families of 8 villages engage in supplementary livelihood activities based on animal husbandary and NTFP. It includes rearing and marketing of Goatery, poultry and piggery and collection, storage and marketing of non-timber forest produce like fuel wood, Mahua, sal leaf, Tendu leaf, bamboo etc.

(f) 330 Sauria Paharia families produce vegetables and fruits in their new kitchen gardens and use the same in their daily diet.

Outcome 2:

All 330 Sauria Paharia households from 8 project villages utilize secure drinking water, sustainable source of water for daily use and renewable energy saving devices for cooking and lighting.

a) Ten drinking water sources in 3 villages will be repaired which will provide all year round safe drinking water to the entire population.

b) All 330 households use smokeless chullah with water heating capacity. 330 smokeless chullah will be provided to the beneficiaries which will be procured from the outlets of Jharkhand Renewable Energy Development Agency in Ranchi and Deoghar.

c) All 330 households use solar lamp and as a result the children can study in the light and there is no fear of snakes and insects.

d) All 100 hoseholds use roof top rain water harvesting structure for their kitchen gardens and domestic purpose.

Outcome 3:

Self Help Structures of 330 BPL Sauria Pahara families from 8 villages implement the project activities and other development activities with the support of the PRI members.

a) Eight (8) women SHG (Self Help Group) are formed by the project for micro-credit activities including income generation. The members will have access to savings and credit schemes launched by NABARD and other public sector banks.

b) Eight (8) Water Shed Committees(WSC) are formed by the project which will plan and implement the water shed activities, manage and maintain the common properties created by the project according to the land use plan.

c) Two Community Resources Persons (CRP) and one Barefoot Veterinary Cadre per village (i.e. 16 CRPs and 8 veterinary cadres in all) are trained in sustainable agriculture, animal health and immunization will pass on their knowledge and skills and act as Resource Persons for the farmers.

d) One SHG from each village (i.e. 8 SHGs in all) will be members of various panchayat level committers like Village Health, Sanination and Nutrition Committee (VHSNC), Gaon Van Adhikar Committee (GVAC) as well as School Management Committee (SMC) etc. so that they can facilitate the process of rights and entitlements of the target population.

e) PRI and Gram Sabhas of the localities adop resolutions with regard to climate change adaption and nature conservation including community forest rights and allocate budgets for the maintenance of the common properties created by the project.

f) The new community centre is used for trainings and meetings for project and others development activities in the area and will be managed by BF after the project.

3.4 Other Project Related Issues and Aspects

Child Protection

BF will ensure the protection of children in the project area. As an indirect benefit of the project, the children experiencing the adaptation to climate change by the community will be well prepared and knowledgeable for future life. It will enable them to have better, qualitative and sustained life in future.

Sustainability

The project is based on the traditional knowledge of the Sauria Paharia and an interactive process of change in the community by gradually introducing the new science and technological practices for improving their livelihoods. This will be coupled with creating the self help structures and activating the PRI and empowering these to get their entitlements from the state agencies. The project activities are so planned to sustain the financial, institutional, socio-cultural and environmental benefits after completion of the project.

Risks and Assumptions

While formulating the project, certain assumptions were made such that no drastic changes would occur in the situations, conditions and circumstances in the project area affecting execution of the project.

Risk factors such as epidemics, distress migration, drought, loss of mandays due to malaria and other chronic diseases etc. have been well taken care of and mitigation measures envisaged to be readily available as and when required.

Project Personnel

The project will be headed and managed by a Project Coordinator. In addition, the project team includes one Assistant Project Coordinator, one Accountant, 3 village Animators, one Technical Supervisor each for Agriculture and Civil Construction, and one Driver to support the Project Coordinator in planning, execution, monitoring and supervision of the project.

The project has been implemented by Badlao Foundation with the financial support of K.K.S. Germany as well as local contribution. The tenure of the project was from 2013 to 2016, extended till April, 2018.

3.5 Evaluation and Research Studies

The Badlao Foundation (BF), while planning for the action project on sustainable development of livelihoods among Sauria Paharia, also incorporated in it a plan for undertaking evaluation and research studies at the end of the implementation phase. The research study was aimed at assessing the impact of the action project on the living conditions of the Sauria Paharia Population.

In this context, Badlao Foundation since beginning of the project has associated the Badlao Institute of Technology and Management Ranchi (BITM)(a sister organization of BF) in planning and conducting the proposed Impact Study of the project.

The study team of BITM collaborated with the Action Project team in planning, collecting, processing and analysis of primary data required for implementing the project, to monitor the progress of the project and assess the impact on the Sauria Paharia population. Broadly three major research and evaluation activities were planned and carried out from the beginning to the conclusion of the action project and reports were prepared accordingly.

Baseline Survey

The survey was conducted in the beginning of the project to collect information on demographic and socio-economic characteristics of Sauria Paharia, their resource base, institutions and access to government services and facilities in the project area. On the basis of the survey a Baseline Study Report was prepared in 2014.

Project Team

The project team prepared monthly, quarterly and annual progress reports regularly during the entire implementation phase of the project. These reports helped the project to assess its achievements vis-à-vis targets, know the shortcomings and take necessary corrective measures.

Impact Survey

An impact study was conducted towards the end of the project in January - February 2018. The main objective was to study the changes brought about by the project on the living conditions of the Sauria Paharia and their surrounding environments including climate, land and natural resources.

As a result an impact study report has been prepared. This study is based not only on the impact survey (end survey) but also includes salient features and

findings of the baseline survey so as to examine the changes in Sauria Paharias life before and after the implementation of the development project. The Annual Progress Reports (2014 to 2017) of the project have been helpful in perusal of the progress (activities and accomplishments) of the project and relate it to the changes envisaged in terms of increase in annual income, reduction in migration and improvement in food security and agricultural production of the Sauria Paharia.

4
Baseline Study of Sauria Paharia Villages

A baseline survey was undertaken in the beginning of the project in 2014 for the purpose of collecting necessary socio-economic information of all the 328 Sauria Paharia households of 8 villages of Sunderpahari block. The baseline information would serve the purpose of providing data to plan the project activities as well as act as bench mark data for measuring the changes and impact as a result of implementation of project activities over the project period.

Methodology

Universe of the Study Area

The universe for the baseline survey includes all the 328 households of 8 Sauria Paharia villages of Sunder Pahari block in Godda district. The eight villages are Champa, Dandagora, Dumar Kajri, Goga, Liladhoni, Senakatar, Talvitta and Tamligora.

Methods of Data Collection

- Household Survey Schedule
- Focused Group Discussion

Household survey was conducted with the help of a household schedule containing questions on socio-economic information of the household and its members. The Investigators collected the household information by interviewing the head of household through door to door visit.

Focused group discussions were held with the villagers to assess the common needs and resources of the community to facilitate realistic planning of strategies and activities for sustainable development of their livelihoods.

Thus, the relevant data was gathered through field work for the 8 study villages and 328 Sauria Paharia families of these villages in January and February 2014.

Data Processing and Analysis

The primary data collected from the households was processed through computer, frequency tables were generated, percentages and averages were calculated to make the analysis more meaningful. Bar Chart, Pie diagram and graphs were also drawn to make the results more articulate and visible.

Preparation of Report

A Baseline Survey Report was prepared describing the objectives, methodology and main findings and conclusions of the Survey.

Results

The results of the baseline survey are summarized in the following pages which give clear picture of the pre-project status of demographic and socio-economic situation of Sauria Paharia of project villages.

There are 328 households in 8 Sauria Paharia villages with a population of 1420 persons. Village wise distribution of household population is as follows.

Table 4.1: Village and Sex Wise Distribution of Household Population.

S.No.	Village	Panchayat	No. of Households	Household Population		
				Male	Female	Total
1.	CHAMPA	PAHARPUR	17	35	43	78
2.	DANDAGORA	KAIRASOL	59	131	117	248
3.	DUMAR KAJRI	"	25	51	58	109
4.	GOGA	"	19	42	47	89
5.	LILADHONI	"	15	28	32	60
6.	SENA KATAR	"	24	51	50	101
7.	TALVITTA	"	92	187	176	362
8.	TAMLIGORA	"	77	174	198	372
ALL			328	699	721	1420

i) The table 1 reveals that Talvitta, Tamiligora and Dandagora villages constitute more than two thirds of the total households of the study area. Sex ratio of 1031 females/1000 males is in favour of women and better than that (i.e. 946F/1000M) for Jharkhand state.

ii) Average family size is 4.33 persons for the whole project area.

iii) As regards age distribution of population, 20% are below 6 years, 23% between 7 – 14 years, 25% between 15 – 30 years and 32% above 30 years of age. With 2/3rd of the population below 30 years of age, the study population can be categorized as young and growing population. It was found that 47% of the population was married and 53% single. Age at marriage, both for boys and girls, was between 17 – 20 years. However, some of them also got married above 20 years of age.

iv) Literacy rate was very poor in the study area where only 8% of all persons, 5% of males and 3% of females were literate respectively.

v) The housing situation was also not very encouraging. Majority of the houses have mud walls and tiled roofs or thatched roof. Only 6% houses have brick walls and tiled/thatched roof.

Only 6 households have separate kitchen and 2 have separate store room in their houses. As many as 40 houses have separate cow shed, 48 houses have electric connection, particularly in Dandagora village.

vi) Average annual family income from all sources comes out to be around Rs. 17500. Major part of family income comes from agriculture. As many as 2/3rd of the households belong to the income category of Rs. 10,000 to Rs. 20,000. About 30% have annual family income of above Rs.20, 000.

Only 7% have income of below Rs.10, 000.

vii) Agriculture, particularly shifting cultivation, is the main occupation and source of income of the Sauria Paharia. The family income is supplemented by collection of NTFP, wage labour and animal husbandry. Though agriculture is the main occupation in all the villages, in Senakatar NTFP is also one of main source of income.

Animal husbandry/Cattle rearing are practised only in Champa and Liladhoni in addition to agriculture and Labour. Labour is practiced in all the villages to supplement the family income. Agriculture (mainly subsistence), Agricultural Labour, NTFP and Wage Labour are the main occupations followed by the Sauria Paharia of the study villages.

viii) Majority of the households (84%) are small and middle farmers with land holding size of 2.5 to 10 acres. Less than 10% are marginal farmers having less than 2.5 Acres of land. Only 7% are big farmers with more than 10 acres of land.

323 acres (53%) of land is forest land. 131.39 (21%) of land is low land. 18 acres is middle land and 12.5 acres is residential land. Thus, larger part of the land is upland and forest land. Coupled with lack of irrigation and fragmentation of land holdings, and erratic rains, the agriculture is unable to provide food security for more than few months in a year.

ix) Chick pea (Barbatti) is the top major crop grown in villages, particularly in Telvitta, Tamligora and Dandagora. Next major crops are maize and millets. Sutri and paddy come next in terms of crop area and yield. Paddy is grown in low land in Liladhoni, Dandgora and Telvitta.

Next important crops in rank of crop area and yield are pulses like Arhar (Pigeon Pea) and Mustard (oil seed) followed by Horse gram which are grown in all the villages.

Chick pea is a cash crop and one of the major sources of family income. But, in fact, the Sauria Paharia who are under heavy debt to local money lenders and land lords, do not get even half of the income from its sale, because major part of the chick pea produce is taken away by the moneylenders in lieu of outstanding loan and exorbitant rate of interest on the loan.

x) Vegetable growing is very rare among the Sauria Paharia of the project villages. Vegetables like brinjal, ladies finger, tomatoes, chilli and pumpkin, which need less water are grown around sources of water in all villages except Goga, Dandagora and Telvitta. Senakatar is number one village in vegetable growing. The vegetables are grown mainly for consumption purposes.

xi) Collection of NTFP is a seasonal and supplementary source of income of Sauria Paharia. The NTFP are used both for consumption as well as sale to augment family income. The main NTFP collections are fuel wood, bamboo, Mahua, Sal leaf and Tendu leaf.

xii) In addition to agriculture and NTFP, Sauria Paharia are engaged in daily wage labour work to earn their livelihood. They migrate seasonally to neighboring towns in Jharkhand and other states in search of employment.

Approximately one third of the population of 8 project villages seasonally migrates every year to other places.

As they are illiterate and unskilled, therefore, they get employment of manual work (eg. earth cutting, construction labour) and earn low wages. It was observed that in Liladhoni and Senakatar almost all the adult males migrate seasonally in search of job.

xiii) The Saruria Paharia of project villages have very few assets. They have got brass and steel utensils in all the villages. They also use bike and cycle as personal mode of transport. Television is available in only 2 families of Dandagora. All the villages, except Champa, have mobile phones. Dumarkajri and Dandagora have 2 and 3 bullock carts each respectively for transporting/carraying goods. Dandagora and Telvitta possess above mentioned modern assets more than any other village. Champa and Senakatar have minimum number of these assets as compared to other villages.

xiv) As regards land resources, more than half of the land resources of project villages are under forest. Land and uplands. One fifth of the land is residential and homestead land. Agricultural activities are carried out only in one fourth of the total land of these villages.

There is no source of irrigation in these villages. Agriculture is rain fed. The land is usually sloppy where only crops like chick pea, maize, millet, pigeon pea and mustard are grown.

xv) Main animal resources of the villages are cow/bullock, goat, pig and poultry. Some of them have horses and buffaloes too. The animals are used for consumption as well as supplementary sources of income. Grazing is the main source of food for the cattle. Telvitta has the largest number of all types of live stock in the project area. Goga and Champa have least number of live stock.

xvi) The Sauria Paharia of project villages suffer from acute water scarcity.All the village people of project area (except Dumarkajri) have to bring stream water from one kilometer distance for drinking as well as for domestic use. Dumarkajri people use water from drinking water well located in the village. Liladhoni and Goga villages use water from well as well as river.

Dandagora village have an additional source of water i.e water tank constructed by coal mining company of Jindal. Rest of the villages use only river water for drinking and domestic purpose. The job of fetching water from the river/streams is traditionally entrusted to women of the house who traverse long undulating hilly path every day from home to river and back. They spend more than 2 hours per day for fetching water from the stream. Thus, the project people are far away from access to safe drinking water, which becomes even acute during hot summer season.

xvii) As regards availability of infrastructure there is only one Anganwadi centre (AWC) located in Dandagora village in the whole project area.

There are primary schools (buildings only) located in Dandagora, Liladhoni and Tamligora villages. Only one school i.e. in Dandagora is operational and other two are dysfunctional.

Electricity is available only in Dandagora. There is one drinking water tank constructed by Jindal Company in Dandagora. Thus, Dandagora is the only village in the project area which has more infrastructural facilities than in other villages.
As the project area is not connected with proper road communication, the villagers have to pass through bushy foot paths to go to other places. People are deprived of basic facilities like education, ICDS and other basic health care services. They depend upon weekly markets for purchasing things of daily use.

xviii) In terms of enjoying the benefits of Rights and Entitlements conferred by the government to the tribal people of project area, majority of the families (87.5%) have been provided BPL card and are availing services from PDS. 110 (33.50%) families have job card but none of them got any work under MNREGA. 23 persons were entitled for old age pension. 30 women get widow pension and 7 get disability pension.
It is a matter of great concern that most of the beneficiaries of the government schemes fail to avail these services because they are unable to tread hilly tracts to reach the service providing institutions located in plain areas.

xix) As mentioned above the service providing institutions are located at distant places from the project villages. Due to hilly location of the project area and lack of road communication the service providers are unlikely to reach these villages and meet the requirements of the people.

PDS, hospital, Panchayat office, weekly market and Post office are located far away at a distance of 5 to 14 Km from different project villages. Banks, Block office and Police Station are located far away at a distance of 22 – 30 KM (at Sunderpahari) from the project area. Similarly college and permanent market are situated at a distance of 45 – 60 Km at the district headquarters, Godda.

Challenges of Development of Sauria Paharia in the Project Area

a). There is acute scarcity of water for the purposes of drinking, domestic use and irrigation.

b). Roads and transport are very poor which obstruct the free movement of people and goods in the project area. The hilly tracts, undulating land and forests make the area inaccessible particularly during rainy months.

c). The project area lacks adequate health care, nutrition and immunization services for children, women and sick people.

d). There is lack of awareness about environmental sanitation and personal hygiene.

e). Indebtedness is also one of the major problems of Sauria Paharia. They are trapped in a vicious circle of poverty and indebtedness and continue to be in the clutches of money lenders. The irony is that those local non-tribal money lenders are their friends in need as well as exploiters. The banking services are located far away and are inaccessible to them in the hour of need, making them vulnerable to be exploited by the traditional moneylenders who charge exorbitant rate of interest.

5
Natural Resource Management, Sustainable Agricultural Practices and Other Income Generation Activities

As stated earlier the project on sustainable development of livelihoods and adaptive response to climate change in 8 Sauria Paharia villages of Sunderpahari Block was initially planned for a period of three years and three months. The preparatory work was completed in the first three months from October to December, 2013. The implementation of (year wise) planned activities was undertaken from January, 2014 to December, 2016. It was further extended by one year upto December, 2017. To complete some of the remaining field activities the project was given another extension of four months up to April, 2018. Thus, the project continued for more than four years.

The planned (expected) outcome of activities carried out under natural resources management and agriculture was that 330 Sauria Paharia families of 8 project villages will increase their income and food security through safeguard and sustainable utilization of natural resources, sustainable agricultural practices and other income generation activities based on animal husbandry and NTFP.

5.1 Soil Conservation and Water Harvesting Activities on 320 Acres of Land

Soil and water conservation is the need of the hour in the project villages because of adverse effect of degraded forests and abrupt impact of climate change on the people and their habitat. Therefore, soil conservation and water harvesting activities were taken up on priority basis under natural resources development programme of the project. Total target area under soil conservation work is 320 Acres which includes private as well as common land treatment and availability of irrigation for 100 Acres. The land leveling activity was taken up in 110 acres of hill slope land.

5.1.1 Land Leveling, Bunding, Boulder pitching, SCT, CCT

Land Leveling

(i). The Planned land leveling target for the entire project period was 24 Acres. It was supposed to be completed in the year 2015 itself. Out of this, the activity was completed in 21.45 acres of land of 38 farmers in 6 villages.

- A Total of 2606 mandays were generated leading to Rs.3.73 lakhs of wages earned.
- 15 farmers cultivated 9.05 Acres of Leveled land with paddy, Kurthi and mustard respectively.

(ii). In 2016 the target of land leveling was revised from 24 Acres to 110 Acres for the entire project period. The target for 2016 was fixed at 52.75 Acres, of which 38.06 acres were achieved where in 19 families benefitted from this activity. The 57 households who had benefitted from this activity during 2015 and 2016 cultivated paddy, Kurthi and maize crops in these lands.

The remaining work of more than 17 acres of land leveling could not be undertaken in the post harvest period (October to December 2016) as farmers were busy with post harvest operations.

(iii). The land leveling target was raised further from 110 acres to 114.5 acres in 2017. The target for 2017 was fixed at 55Acres of land leveling of which only 32.30 Acres was achieved. The cumulative achievement is 91.71 acres (80%) as against a target of 114.5 acres (initial target 110 acres). As a whole 105 farmers have benefitted from land leveling intervention.

Table 5.1

Year wise Distribution of Land Leveling Work in the Project Villages (2015 – 2017).

Year	No. of Villages	No. of Families	Acres	No. of Mandays	Wages Earned (Rs.)
2015	6	38	21.45	2606	3,73,410
2016	3	19	38.06	1435	2,15,702
2017	12	48	32.20	-	1,92,775
All Years	-	105	91.71	-	7,81,886

***Source** – K.K.S. Annual Report – 2017 (Table on P. 13)*

This activity has been very beneficial to the Sauria Paharia families for growing food crops in the leveled land. In the year 2017, with the onset of Kharif, farmers cultivated 18 acres of leveled land in 6 villages where they planted Kurthi, maize and Arhar. More land was being developed for plantation of upland paddy and minor millets.

Among the 8 Sauria Paharia villages Tamligora, Liladhoni and Telvitta have benefitted most from the land leveling activity in terms of number of beneficiary families, acerage of land leveling, number of mandays generated and wages earned.

Table 5.2

Villagewise Distribution of Commulative Land – Leveling Work done in the Project Area (2015 – 2017).

SNo.	**Name of Village**	**No. of Families Benefitted**	**Acreage of Land Leveling**
1.	Tamligora	32	24.00
2.	Liladhoni	21	22.60
3.	Champa	7	2.80
4.	Telvitta	14	22.86
5.	Senakatar	10	3.70
6.	Dumarkajri	11	7.65
7.	Dandagora	7	7.70
8.	Goga	3	0.50
	All Villages	105	91.71

Source – KKS Annual Report 2017 (Table on P13).

In Liladhoni, Chamra Paharia, the Gram Pradhan (village headman) developed 5 acres of land leveling from project support and also developed additional 3 acres from his own fund. As a demonstration affect, four other families of Liladhoni came forward for land leveling work through the project. Chamra Paharia planted upland paddy on his 8 acres of leveled land and produced 40 Quntals of paddy. He has emerged as a trail blazer among the local farmers.

Land Bunding

The target for the entire project period for land bunding was 46.5 Acres, of which only 11.65 acres (25%) was undertaken during 2015 to 2017. As a whole 19 farmers were benefitted through this activity. In the Kharif season 5 acres of this land (in four villages) was brought under paddy cultivation.Tamligora and Liladhoni were the villages which were mainly benefitted by land bunding activity.

Boulder Pitching

Of the total target of 350 ft of Boulder pitching for the entire project period, only 60 ft of such work was undertaken from January 2015 to March 2015 for three households of Tamligora village. 233 mandays were created and Rs.36814 was earned as wages .After March 2015, no work was done under this activity during rest of the project period.

Gully Plugs and loose boulder structures

In the second quarter of 2015, seven (7) Gully Plugs of 217.5 ft were made and 16 Acres of land was treated in Tamligora. No such activity was taken up afterwards.

In 2016, 5 nos. of loose boulder checks were made in Goga village which helped to reduce erosion in 105 acres of land. 108 mandays were generated and Rs. 20,800 was earned as wages.

Continuous Contour Trench (CCT)

Total target for the project period regarding CCT was 55 acres. About half of the target (27.8 acres) was achieved during the entire project period.

In 2015, as a part of soil and moisture conservation measures, CCT were made at selected places in Liladhoni and Dandagora villages. The 230 feet long CCT influenced 1.18 Acres of land.

No such activity (CCT) was undertaken in 2016. In 2017, a total of 27.8 acres of land was brought under continuous contour trenching in five villages with a total length of 7247 running feet. It was expected that through these trenches there will be a recharge of ground water. Sixteen farmers with land in this area were expected to benefit from this activity. Senakatar village has benefitted most with 2652 feet of CCT influencing 10.3 acres of village land.

5.1.2 Water Conservation Activities

To utilize the benefits of local natural resources and to promote the habit of conserving and regenerating the depleted water resources and degraded forests, the project has focused on water harvesting and water conservation measures that will help to revive bio diversity in a tangible way.

Construction and utilization of 2 Weirs to treat and irrigate 43 acres of land.

Out of the 8 project villages, the natural set up of Telbitta was found suitable for construction of weirs depending upon the flow of water from the top areas to slopes of this village.

Thus, two weirs were planned to be constructed in Telbitta to help promoting of mixed cropping in about 10-12 acres and sustainable agricultural practices in about 9 acres of land.

One weir was constructed at Telvitta in 2015 with potential to irrigate 11 acres of land benefitting 12 households. Till 2016, the utilization of the land by the farmers was not satisfactory as some crops sown in early kharif had been damaged during a heavy spell of rains.

In 2017, an initiative was taken by the members of SHG of Telvitta to cultivate 60 decimals of land in the downstream of this weir (checkdam). The SHG got into contract with the land owner who owns around 7 acres of land near the checkdam. As per the contract the SHG has grown kurthi (pulse) in 60 decimals of land using the water from the check dam. The harvest of 40kg kurthi was shared by the SHG and landowner in the ratio of 2:1.

The second weir was proposed to be constructed at Dandagora village. However, the identified site has fallen within the coal block area which is being acquired by Adani Group of Industries. Therefore, the plan for second weir was cancelled.

Construction of Diversion Based Irrigation System (Gravity Flow Water Irrigation System)

Before the close of 2017, the project team explored potential for construction of diversion based irrigation system covering two villages of Goga and Telvitta. A technical consultant was hired for this work who visited the area and guided the team on selection of the site for storage tank, water collection point and connecting pipeline. Design and estimation of the system was also provided by the technical consultant.

The entire team got engaged in completion of the Irrigation system, first clearing the bushes and land and thereafter mobilization of the Pahariyas for trench cutting. With the help of the community nearly 1000 feet of trench cutting was done. Considering the difficult terrain for digging trenches manually for the entire length of 3500 feet, team was allowed to use JCB machine for trench cutting and refilling so that the work could be completed in the stipulated timeframe.

In the next three months of January to March, 2018, only diversion based Irrigation work remained the focus of soil and water conservation activities under the project. A total length of 3500 feet was excavated with the help of JCB machine by the end of February, 2018. However, there were other problems such as transportation and storage of construction materials upto the hill top, non-availability of technical persons like plumber which delayed the completion of this irrigation system. Laying of pipes on whole length of 3500 feet up to the Water Tank constructed just below the check dam was completed in the second half of March

and construction of Water Tank was also completed before the end of March. Simultaneously filling up of trenches was also completed in the same period.

However, on 28th March, the day for commissioning the system, there developed seepage of water in the check dam due to which water did not come out at the outlet. The whole team was shocked but not disheartened.

On 7th April, a technical expert on gravity flow water irrigation system from neighboring state Orissa was rushed to the site to advise on rectification of seepage problem. As per instructions of the expert, 6" PCC plate of 4' X 16' size was constructed at the ground level of the flow of the spring. Besides, two guard walls were constructed on both sides of the check dam. The civil work was completed in four days from 11 – 14 April. On 15th April, the check dam was left for water logging. Next day it was observed that water has logged 3 inches above the mother pipe set in the check dam. The check valve near the check dam was opened, but water did not flow out at the outlet.

At this stage the pump machine was used to pump the water. After some time there was flow of water at the outlet located in Goga village, more than 1400 feet below the site of the dam. In the beginning the water coming out of the outlet was extremely muddy confirming the problem of blockage in the pipe line. Slowly, the muddy water was replaced by gush of clean water from the outlet.

In the evening the women folk of the village rushed down to the outlet with their utensils to carry water home. The village people of Goga, all men, women and children and the members of the project team present at the spot were full of joy on the successful completion of the system and easy access of drinking water in the village.

Construction and Utilization of Jalkund/Small Pond

One Jalkund (small pond) which already existed in Liladhoni village, was renovated during January to March, 2015, through minor works like stone pitching, excavation and inlet and outlet for passage of water. The Jalkund was supposed to irrigate 7 acres of land for sustainable agriculture.

12 households of Liladhoni were engaged in the construction work. 104 mandays were generated and the villagers earned Rs. 16432 as wage labour.

6 farmers cultivated paddy in 7 acres for the first time which yielded 16 quintals of grains in 2015.

In addition, the Jalkund will help in water recharging of the soil, reducing loss of top soil of the run–off way, recharging of ground water and support for double cropping.

Construction and Utilization of 3 Spring Wells

Three spring wells were constructed in Talvitta Pradhan Tola, Tamligora and Dumarkajri villages (one in each village) upto March, 2015. The spring wells were constructed on the perennial springs passing nearby the aforesaid villages.

The spring wells are being used largely for domestic purpose as well as agriculture. Common purpose use of spring water is for bathing, washing clothes and bathing cattle.

No new spring wells were constructed in 2016 and 2017, however, the already constructed spring wells were repaired in these years.

One additional outlet (drain) was constructed for providing water to 3 acres of vegetable fields belonging to 7 families of Champa village.

A total of 68 families depend upon these spring wells for drinking and other domestic use. A total of 10 acres of land has been cultivated by 42 families in the vicinity of spring wells. The construction activity generated employment worth Rs. One lakh as wages for the local villagers.

SPRING WELL AT TAMLIGORA HILL AREA

The Tamligora hill area as usual, suffers from dearth of water throughout the year because water logging in this zone is very difficult in a natural way.

Incidently, there is a spring flowing nearby Tamligora and Senakatar villages in this area. The spring is nearly 1500 meter away from both the villages. In 2015, the project constructed a Spring Well near it for the storage of water to be used by the families of both the villages. The size of the Spring Well is 6'X5' and the depth is 3' and just at the down slope constructed a Water Storage Tank with a length of 16 feet guard wall. The main purpose of the Spring Well is for drinking water. The Water Storage Tank provides drinking water for cattle and for the other domestic purposes. Besides a drain of nearly 20 feet of length was constructed through which the excess water from the Water Storage Tank flows out to the nearby field to be used for kitchen gardening and agriculture .

It has proved to be very useful construction for the logging of water for the entire community living in both the villages. Throughout the year, this Spring Well and the Water Storage Tank have been supplying the required quantity of water for the villagers.

Construction and utilization of 4 Water Recharge Tanks

In 2016, Four Water Recharge Tanks (WRT) were completed in four villages. The main objective was to improve access to water facility in these villages and use it for agriculture purpose. In kharif of 2016, 153 families had cultivated paddy in the command area of WRTs. A total of 33 acres of paddy had been cultivated in that year along with vegetables like cucumber, bitter gourd, and pigeon pea and maize on the bunds of WRTs. However, it was observed that in two WRTs of Tamligoda and Goga the water level was less. It was expected that these will store more water after desiltation post monsoon. In Leeladhoni and Telvetta Pradhan tola WRTs there was sufficent water and villagers have also initiated fish farming in the WRTs.

In 2017, the tanks in Tamligoda and Leeladhoni were used for fish farming by Kumra Pahariya of Tamligoda and Chamra Pahariya of Leeladhoni. 11 kgs of fingerlings were released in the two ponds and 165 kgs of fish was harvested. The profit of Rs. 23,100 was earned by the farmers from fish rearing activity.

These two farmers had also cultivated maize and pigeon pea near the tanks and harvested 43 kgs of pigeon pea and 34 kgs of maize. The surplus was sold in the market and the farmers earned some money.

In the quarter July- September 2017, 6 kgs of Fish was harvested from Tamligoda water tank by one beneficiary. In Telvitta 7 farmers cultivated paddy in 3 acres of land **In 2016,** a total of 153 families had cultivated crops in their land below the WRTs however in Goga and Tamligoda due to water shortage in the WRTs the production was affected by atleast 30%. **In 2015,** 4 farmers had cultivated paddy in Telvetta Pradahn Tola in 4 acres which had yielded 3 quintals of paddy.

In addition to this, Badlao Foundation had also facilitated village level planning under the Government's Yojana Banao Abhiyan through which additional 4 WRTs were constructed by the government department. People worked as labourers in the construction work and earned wage income through this employment.

For the proper functioning of the these Water Harvesting Structures and to ensure their proper maintenance during the project and post-project period 8 Watershed Committees were formed, one in each project village. These Watershed Committees are responsible for maintenance and management of the Water Harvesting Structures so formed. The members of these committees were oriented through 16 orientation programs on the concept of watershed program and promote their awareness and knowledge on management aspects.

The water-conservation works which were taken up in 320 acres of land remained linked with soil-conservation measures (e.g. land leveling), to ensure proper benefits directly for the promotion of agro-productivity. To avail full benefits of soil and water conservation measures and ensure proper involvement of stake holders, to ensure improved land fertility and increased agricultural production, the project organized 6 trainings and orientation of water user groups and community members on land, soil and water management issues.

5.2 Tree Plantation

It was planned to bring 50 acres of hilly slope shifting cultivation area and 30 acres of area around water harvesting structures under plantation of 9000 fruit trees and 16000 timber trees with 80% survival rate of saplings. The intervention was to be taken up exclusively on private land.

Though whole of the plantation activity was planned to be completed by 2015, but in the early period of the project tree plantation activity continued to be below the target. The slow progress in plantation was mainly due to difficulty in procurement and transportation of plants on time as well as scarcity of water sources to provide protective irrigation.

In 2014, only 18 acres of land in four villages was brought under plantation in which 1320 trees of Mango, Jack fruit and Lemon were planted. However, survival of plants was only 5% and far below the mark, mainly due to lack of irrigation.

As a consequence of poor performance of tree plantation activity in 2015, an alternative strategy was proposed in early 2016 as follows:

a). 50 acres of natural regeneration of forest by protection system in the village through bush clearing, trenching for cattle proofing and watch and ward mechanism.

b). Plantation of Arjun trees in 30 acres of land around water recharge tanks and barren area and also support sericulture with 85% survival rate of trees. However, plantation of Arjun trees could not be taken up in 2016 due to poor preparatory work. Similarly, no afferestation activities were taken up in 2017 for the same reasons.

5.3 Introduction of Sustainable Agriculture.

5.3.1 Training and Orientation on Sustainable Agricultural Practices.

- **Training on compost making**
  Three trainings were organized against target of 2 trainings where 87 male farmers participated during 2014, 2015 and 2017.
- **Integrated Pest Management**
  2 Trainings against the same target were conducted one each in 2014 and 2017. 68 farmers participated in these sessions.
- **Seed and Grain Management**
  Two planned training programs were conducted in 2014 with 55 participants.
- **Animal Husbandry**
  2 targeted training sessions were held in 2014 for 56 male farmers.
- **Afforestation and Plantation**
  Only one out of 6 planned orientations was held for 25 male Paharias in 2014. The remaining 5 orientation programmes were dropped because the plantation activity was discontinued after 2015 due to various difficulties in pursuing it further.

5.3.2 Distribution and Utilization of Seeds/Inputs.

Effort was made under the project to promote improved agricultural practices by introducing new crops. Given the traditional agricultural practices, poor economic conditions and limited exposure to markets, the Sauria Paharia were initially found reluctant to adopt new and improved agricultural practices which require more inputs. It was planned under the project to improve the yield of traditional crops cultivated by Sauria Paharia by providing them improved seed support and better management practices. Another strategy was to introduce vegetable cultivation wherever possible especially where new water harvesting structures were created and roof top rain water harvesting structures were built at household level.

During initial years of the project, emphasis was on demonstration of vegetable cultivation and provision of seed input for cultivation on hill slopes used for shifting cultivation. As Cow Pea, Chick Pea, and horsegram have good market price and are in high demand, the project focused on supporting cultivation of these crops by providing improved quality of seeds to Sauria Paharia farmers. It was also assumed that the farmers will be liberated from the clutches of local money lenders who charged exorbitant rate of interest on loans taken by the farmers for

purchasing seeds and fertilizer and consequently farmers were forced to sell their crops to the money lenders on lower price than prevalent in the market.

Therefore, to support to promote sustainable agriculture practices, seeds of chick pea, horsegram and vegetables were distributed to 312 Sauria Paharia families of 8 villages, in the first year of the project

These 312 families cultivated 111acres of hill land with the procured improved seeds of chick pea, horsegram and vegetables and earned average surplus income of Rs.6299/-acre.

Next year i.e. in 2015, seed support for cow pea, horsegram and mustard was provided to 200 families of 8 villages who cultivated nearly 466 acres of land. It was found that some farmers who cultivated cow pea and horsegram got an average yield of 80kg/acre and a surplus income of Rs. 5821 per family. However, due to insufficient rain in 2015, there was decrease in average yield/acre as compared to 2014.

In third year i.e. in 2016, a total of 215 families were supported with good quality seed of cow pea, horsegram and mustard which was sown in 219.7 acres of land. The benefit of improved quality of seed was understood by the farmers by this time, therefore they contributed 50% of the seed cost this year and promised to preserve seed for next cropping cycle. Vegetable samplings were also supplied to 198 families for planting in kitchen garden as well as in the fields. Through upland cultivation these families were able to earn a surplus of Rs.3200 to Rs.5800 per family. Overall production of cow pea was better than the previous two years leading to stable family income. The farmers have also preserved on an average 10kg of seed for the next cropping season.

In 2017, the project support was provided to 108 families of 8 villages for cultivation of cow pea. The seed support of 1766kg was given to the families who also contributed 50% of the cost of seed. Likewise 300 families cultivated various types of legumes and millets to meet their food requirements. The support of seed has helped the families to increase their area under crops and move towards food security. The combination of various crops provided safety net for the families in years of poor rain fall. Crop rotation has also improved the nutrient quality in the soil.

5.3.3 Promotion of Vegetable Production

Vegetable cultivation is a relatively new practice in the region. Due to scarcity of water and underdeveloped water sources, farmers hardly took up vegetable farming. With the development of water harvesting structures coupled with integration of roof top rain water harvesting vegetable farming has shown the potential to improve the nutrient intake as well as family income among the Sauria Paharia of project villages. The plan for the entire project area was to give support for growing vegetables to all the 330 Sauria Paharia families. Targets of such support each year were planned as 130 households in 2014, 100 households in 2015 and 100 households in 2016 respectively. As the project was extended to the year 2017, there was target of 100 households fixed for this year too.

In 2014 as many as 230 families (against target of 130) were given support for vegetable farming. Along with this, a demonstration field of vegetable cultivation was prepared in Domdih Centre to train and motivate farmers in vegetable growing.

In 2015, as many as 124 families (target 100 families) were provided with vegetable saplings of Tomato (5224), Brinjal (995), Chilly (3308) and Cabbage (2266) which were planted in 2.69 Acres of land. Sapling distribution was preferred to seed distribution for vegetable cultivation due to better survival of samplings over germination of seeds. Vegetable cultivation was largely taken up in Tamligora followed by Champa and Senakatar. The total yield for all the villages was 4001.2kg and the farmers earned an income of Rs.44381/- by selling the surplus vegetables in the local markets.

In 2016, a total of 200 farmers (target – 100) were supported for vegetable cultivation in the form of seeds and healthy saplings. This year seeds of radish, lady's finger, bitter gourd and cucumber were distributed to the families along with saplings of chilly, tomato, brinjal, cabbage and cauliflower for Rabi season cultivation. Farmers cultivated vegetables seeds in 7.11 acres of land. The number of households growing vegetables was highest in Tamligora with 79 households growing vegetables. The number of vegetable growing families in Tamligora this year was twice the number in 2015. Irrigation of vegetable plots is a big challenge to the farmers. Telbitta and Dandagora with better irrigation facilities were ahead of other villages in having better production of vegetables. The production in all the villages was 3532 kg and they earned income of Rs. 50088/- in 2016.

Similarly samplings of Brinjal (3910), Tomato (6220), Chilly (3620) and Cabbage (4670) were distributed among 164 families (largely from Telbitta, Tamligora and Dandagora) who planted these saplings in 3.76 acres of land and earned an income of Rs. 40969/-. Production was better in Telbitta and Dandagora due to better irrigation facilities.

In 2017, village level meetings were organized and plan for each village was finalized for the families taking up vegetable cultivation this year. In October, 2017, 16100 saplings of vegetables were distributed among targeted 100 families who planted these saplings in their newly developed kitchen gardens.

The saplings were sourced from Krishi Vigyan Kandra , Godda. The type of vegetables grown in 2017 included cauliflower, cabbage, bringal, chilly, tomato, potato, bottle gourd and bitter gourd respectively.

Budhni Paharin of Telvitta (Pradhan tola) and her five family members developed a plot for Kitchen Garden under the supervision of Project Personnel. Her Kitchen Garden has the size of 703 sq. ft. (37 ft. X 19 ft.) including sufficient and strong fencing around the area. She had planted the vegetables like Brinjal, Tomato and Chilli. The water management done by her was noteworthy. She channeled all the waste water used for washing the utensils to her kitchen garden and did not waste a single drop of waste water of her house. As a result, her Kitchen Garden provided her with year-long production of chilli.

The other people in the village have followed her example and shown interest in kitchen gardening.

This is the success story of Dani Paharia of Liladhoni village in developing his Kitchen garden. He lives along with his other five family members. He was provided with Roof Top Water Harvesting Structure along with invaluable knowledge on Kitchen Gardening through Training in the year 2015. He prepared the plot for Kitchen Garden under guidance of the Project Personnel. The Kitchen Garden is of the size of 750 sq. ft. (50 ft. X 15 ft.) including adequate and strong fencing around the plot. Due to fencing, he saved the vegetables grown during last summer from being destroyed by the Livestock of the village. He was given the saplings of Brinjal, Chili, Tomato, Cauli Flower for his Kitchen Garden from the project.

He has been growing various vegetables in his kitchen garden for consumption by his entire family. All the vegetables grown in his Kitchen Garden do not have any kind of pesticide and inorganic manure. This provides a healthy and toxic free nutrition for all the family members. Moreover, he is saving Rs. 25/- per day on purchasing vegetables from the market.

Dani Paharia has set an example by growing vegetables in his Kitchen garden sufficient for daily consumption of his family members. The use of vegetables in daily meals has provided food and nutritious support to the family.

5.3.4 Construction of Compost Pits

A total of 7 demonstration compost pits were planned to be constructed during the project period. Till 2015, six out of seven pits was completed in Tamligoda village in which cow – dung and earth worms were released. The production was to start in the first quarter of 2016. It was hoped that these demonstration pits will help to create more demand for vermi compost in future.

No new pits were constructed in 2016. Although farmers were using cow – dung as manure in their agricultural fields. As the production of vermi compost was adversely affected by high temperature, therefore, it was difficult to promote the use of vermi compost this year.

5.4 Income Generation from Animal Husbandry and Non Timber Forest Produce (NTFP).

According to the project plan, it was decided to provide goats to 100 beneficiary families in 2014, to 100 families each during 2015 and 2016 respectively as a part of non-farm intervention for income generation.

In 2015, forty members of SHGs of five villages (Dandagora, Tamligora, Liladhoni, Champa and Senakatar) were supported with one Bengal variety of goats. The goats were procured from Deoghar and transported over 80 kms to reach the project villages located in hilly area of Sunder Pahari block. The goats were vaccinated during purchase. However, due to cold conditions in this area only 5 goats survived out of 40 purchased. In Dandagora and Tamligora only one goat (out of 31) survived.

Based on the feedback of KKS and adverse experience of goat rearing in 2015, the plan for income generation support was revised and new activities were incorporated.

Out of 330 households of 8 villages 279 were selected for goat rearing (Rs. 7000/hh), 23 households for sericulture (Rs. 5000/hh), 17 families for Mahua procurement and 11 families for small business (shop) (Rs. 12000/hh) respectively.

5.4.1 Goat Rearing

Goat rearing activity was initiated with 40 families in 2015, but due to high mortality, it was not successful. Thereafter, in 2016 fifty families were supported for goat rearing. The process adopted was to purchase goats locally, collect individual contribution of Rs. 1000/- from each beneficiary household and the purchase was made directly by the beneficiary families. The goats were also vaccinated before transporting them to the villages. But one could still see that there was mortality of goats up to 30% in the second phase. There is a significant need for local service providers who can monitor health of the animals and provide service to the families.

Of the 76 number of goats surviving, all have bred and the families continue to take care of the animals. All families have made temporary/permanent sheds for the animals. It was planned to train Para vets to address the issue of mortality of goats.

5.4.2 Petty Business

Nine families were supported for setting up shops for petty business locally with the objective of improving their income. The households have contributed Rs. 2500 per family and the project support was Rs. 12,000. The families who have started the shops need support for business development as they were not able to roll the grant amount in a manner to strength their business. It was proposed to provide training on business promotion to the concerned families.

5.4.3 Collection and Marketing of NTFP

Mahua collection and sale has been part of the traditional economy of the tribal families. In 2016, seven families were supported to procure Mahua in bulk, store and sell it when the price was good enough to earn profit. In this case also, each household contributed Rs. 2500 as local contribution. The sale of Mahua has yielded profit of Rs. 40,350. The households had procured Mahua at Rs. 30/kg and were able to sell it at Rs. 50/kg afterwards.

Similarly, 6 families in Tamligora and Dumarpalam were supported for cocoon rearing. The plan was to support 23 households, however given the current preparedness, 6 families have been initiated into cocoon rearing. The families received training from PRDAN on tasar rearing and thereafter procured disease free eggs of 450gms each. The eggs were processed as per schedule which later on turned into larvae. The larvae were then put on the host Asan trees which are abundant near the village. The families transferred larvae on various trees and in 45 days, the larvae turned into cocoons. The families harvested the cocoons and sold these to the traders. The cocoons were sold for a total amount of Rs. 50,000 by the 6 families. Kumra Pahariya earned Rs. 17,500 followed by Deva Pahariya who earned Rs. 13,000. The other households earned in the range of Rs. 4700 – Rs. 5500 each from sale of cocoons.

By mid 2017, it was decided that the project would focus only on encouraging the existing families to adopt good practices in goat rearing and guide the beneficiaries for petty business by giving them training on business plans. Thus no new households were supported for nonfarm based Income generating activities in 2017.

In 2017, no new goats were purchased, but the team made regular contact with the rearer families and motivated them to make shelters for the animals, give vaccination and provide treatment on illness. There was improvement in animal husbandry practices and families have started earning income from sale of goats and kids. In this year 18 families sold 35 goats and earned Rs. 78,350.

As of this period a total of 47 households have 195 goats of which 36 he goats, 78 she goats and 81 kids. All families have made temporary/permanent sheds for the animals.

In the quarter Apr-June 2017 a business development meeting was organized with the beneficiaries supported for setting up shops in the hill region. After that the persons were mentored on starting the shops again and maintaining records of stock and sale in a simplified way. There has been positive results post this and the members have invested in the shops and have earned some income.

In the period July to September 2017 it was seen that two families in Tamligoda village also set up shops with the income generated through participation in other project activities. Therefore a total of 11 households have an additional source of income from shops. These families have invested from the profit generated in last quarter and have continued the business.

In 2017, the 7 families who had been supported for Mahua business carried out the activity but the profit earned was less compared to previous year because of sinking price of the Mahua flowers.

In April – June 2017, families also earned income from sale of Kendu leaves or Bidi Patti. These trees are naturally available in the forests adjoining the villages. The tribal farmers depend on NTFP for their income. 90 tribal families earned an income of Rs. 29,143 from sale of Kendu leaves in the villages. The village wise data on support for Goatery, Mahua, shops and cocoon rearing is given below:

Sl. No	**Village**	**Trades**			
		Goatery	**Mahua**	**Shop**	**Cocoon Rearing**
1	Telvitta	30	7	3	-
2	Dandagora	5	-	1	-
3	Dumarkajri	0	-	1	-
4	Tamligoda	15	-	4	6
	Total	50	7	9	6

5.4.4 Training on Alternative Livelihood Promotion

No formal training was conducted in this period. The households supported for goat rearing and cocoon rearing were oriented upon care practices in case of goats and methods of cocoon rearing respectively in village meetings.

In 2015, four members of SHGs in Dumar Palam Tola of Telvitta were supported to get training in Tassar cultivation from the government department and also linked to PRADAN (an NGO) which was promoting Tassar based livelihood in the region.

The two cases of enterprising Sauria Paharia earning their livelihood through alternative sources of income are cited below to demonstrate the scope for augmenting family income through non-agricultural economic activities.

Setting up a Shop

This has been a success story of Chikna Paharia of Tamligora in the context of income generation through starting small shop. He has set an example of self-dependence through setting up of self financed Small Shop under the guidance and supervision of the Project team. For the last quarter he has earned Rs. 3000/- out of his business. Besides, in the extra time he also earns through his sewing machine. His physical disability has not come in the way of earning a good livelihood.

Case of fish Rearing

This is a success story of Kumra Paharia of Tamligora in the context of fish cultivation. He has set up an example of income generation through Fish Cultivation with self finance. He had invested Rs. 1950/- for 6.5 Kg. of cumin in a pond excavated by the Badlao Foundation under the KKS Project. He has the opportunity to sell the grown up matured fish in the local market which may give him a worth upto Rs. 6,000/- including family consumption.

6
Sustainable Development of Basic Facilities

The immediate outcome of this component is that all 330 Sauria Paharia families of 8 villages utilize secure drinking water, sustainable source of water for daily use and renewable energy devices for cooking and lighting.

6.1 Rehabilitation of Drinking Water Wells

Plan for entire Project Period – 10 wells

- Renovation of wells in 2014 – 4
- Renovation of wells in 2015 – 4
- Renovation of wells in 2016 – 2

Initially a total of six wells were renovated for the purpose of drinking water in five villages. Of these, 4 wells were revived in 4 villages in 2014 and another 2 wells were renovated in 2015. The remaining target of 2 Wells for 2015 could not be achieved as people in the target villages were also busy in construction of water harvesting structures.

The renovated wells provided drinking water to 101 families. Cleaning of the wells was done during the fourth quarter of 2015 to ensure safe water for drinking. However, the wells are not covered, though they have a protection wall above ground level. While, in Goga the water from renovated well is being used for drinking purpose only. However, farmers in other four villages use it for other domestic purposes as well as cultivation of padely and vegetables on their land around the Wells.

Another two wells were renovated, one each in Tamligora and Dumarkajri in 2016.All the wells were disinfected by chlorination in monsoons. Almost 200 families have access to safe drinking water from these 8 wells. Some of the villagers have also started growing vegetables in the vicinity of these wells.

In the year 2016, Dani Paharia of Liladhoni cultivated Potato, for the first time, in 20 decimal of his land near the well. He harvested 70 kg of potato which he consumed in the family and sold the surplus in the local market.

In 2017, the plan was to repair two more new wells to suffice for drinking water requirements of the communities. In July – September quarter the wells were identified and work was started for repairing these two wells. The wells were cleaned by the community itself and this year no case of water born diseases was reported from the area.

The renovated wells have provided safe drinking water for the Sauria Pahariya who otherwise depended on small hill streams for this purpose. It was often dangerous, especially during the monsoons Chlorination of all the drinking water wells was done at the onset of monsoon which prevented outbreak of water born diseases in the community, which otherwise was a regular feature in the monsoon season.

6.2 Promotion of Smokeless Chullah

It was envisaged that all the 330 households use smokeless Chullah with water heating capacity.

6.2.1 Orientation on Usage of Smokeless Chullah

The smokeless chullahs were considered as a step towards providing a clean cooking environment for women and reduce health hazards due to continuous inhalation of smoke.

Any new technology needs user training and maintenance. The smokeless chullahs promoted in the villages were supported to provide smoke free cooking environment. There are certain modifications in the design of new chullah over the traditional chullahs used by the communities. Therefore orientation was given to Paharia households regarding upkeep, maintenance and use of these new chullahs. 310 persons were trained in 6 batches during 2015 regarding use and maintenance of these new smokeless chullahs.

6.2.2 Installation and utilization of Smokeless Chullah

A total of 300 chullahs were planned to be installed in 300 households in the project area. 246 smokeless chullah were installed by the end of 2015. Thus, most of the installation activity was completed till 2015. Further, remaining work of installation of chullahs was not taken up immediately because some of the already installed chullahs had to be repaired. The repair work was taken up first along with orientation to the villagers on use and upkeep of chullahs. Out of 246 chullahs installed so far, 31 were repaired during this period.

By the end of 2016, a total of 293 chullahs were installed. With the time these chullahs also required repairing work since these developed crackes and breakages. It was noticed that frequent damage to chullahs also occurred due to annual house maintenance activities by the villagers. During the repairs of houses made of mud walls and tiled roofs, the chimneys of chullahs were damaged frequently. Thus, repairs of the chullahs were a regular activity for the villagers and the project staff for optimal use of these chullahs. A total of 74 smokeless chullahs were repaired by December, 2016.

In 2017, a survey was conducted for all the households where the chullahs were damaged. The concerned households were ready to contribute labour for repair work. Therefore, by the close of year 2017, a total number of 143 chullahs were repaired of whch currently 72 chullahs were in use.

Thus, while the planned target of smokeless chullahs was achieved cent percent, yet only 143 (48%) of these chullahs were repaired upto the end of 2017. Out of these 143 repaired chullahs only half (72) of these were in use in all the 8 study villages. These chullahs were more popular in Dandagora, Senekatar and Champa as compared to remaining 5 villages of the study area. However, the use of traditional chullah was in vogue side by side with the new smokeless chullah.

The villagers reported that the smokeless chullahs have saved them of health hazards of smoke to women and environment. The chullahs consume comparatively

less fuel wood and provide better and smokeless heating. Supply of hot water from the water heating tank attached to the chullahs was used by the women and children during winter. A case study of successful use of smokeless chullah is illustrated below.

Goli Paharin w/o Asana Paharia of Tamligora village told that she was extremely happy to use the new smokeless chullah promoted by the project. Initially, when field workers of Badlao Foundation were canvassing in the village for adoption of smokeless chullah, she was not convinced of it. Rather, she claimed that she had little space for this device in her small two room house. Later on, she decided to build smokeless chullah in place of her old chullah. However, she also continued to use her old (traditional) chullah located outside her house. One fine day, the local field worker visited her house and demonstrated how to use the new chullah. She was astonished to see how the smoke was going out through the chimney. She started making use of new chullah for cooking meals and continues to do so. She told that the smokeless chullah has relieved her and the family members of the smoke and suffocation and she can use the warm water from the heating tank during winter. She has started promoting the use of smokeless chullah among other neighboring women during the monthly meetings of her Self Helf Group.

6.3 Promotion of Solar Lamp as a Renewable Energy Device for Lighting

It was envisaged that all 330 households use solar lamps and as a result children can study at night and the fear of insects and lizards (snakes) is reduced/ eliminated.

As a matter of promoting the use of alternative source of energy, it was proposed to provide Solar Lamps to 300 families. In fact, there is no electricity in any of these villages and there is darkness all around at night. It is visualized that during 3 – 4 months of bright summer season when sun-light is in plenty, the villagers can be ensured light through harnessing renewal source of energy i.e. sun light. Even the device (solar lamp) can be kept in the open for 3-4 hours that can help it to extract energy from the environment during summer days. The solar lamp can provide light for 3 hours a day once it is charged in sun light at least for 2-4 hours a day.

6.3.1 Orientation on Usage of Solar Lamp

Six batches of training for beneficiaries were planned for the entire project period. All of these 6 batches of beneficiaries of solar lamps of 8 villages were oriented up to 2015. Although solar lamps need little maintenance, the users were explained how to charge and when to charge the lamp. Resource persons gave practical knowledge to the participants about the salient features of the lamp and how to maintain it in good condition. They were also cautioned about not to tamper the battery of the lamp.

A total of 174 Sauria Paharia men and 103 women were oriented about the upkeep and proper use of solar lamps.

Creation of awareness about use of solar lamps has continued on individual basis through inter personal interaction of field animators with the user households.

6.3.2 Distribution and Utilization of Solar Lamps

The target was to provide Solar Lamps to 300 beneficiaries during 2014 i.e. in the beginning year of the project and the same was provided to them within that year.

In the absence of electrification in these hilly villages, solar lamps have proved very beneficial to the community. There was high demand and usage of this lighting device. It was evident that many families were investing in additional solar products and flash lights.

A survey of functional solar lamps conducted by the project team in December, 2015 revealed that 31 lamps had developed some problems. However, these were repaired by a technician and put to use subsequently. Many people have taken initiative to get their lamps repaired locally. The technician from the company also paid frequent visits to the user villages and repaired 16 solar lamps in the year2016. 3 solar lamps were also replaced by the company in the same year.

During a field visit to village Liladhoni in February 2016, the team visited a few houses. It was observed that all of these houses had solar panels installed on their tiled roof tops. They affirmed that they were regularly using solar lamps for light. They claimed that the use of solar light has helped them to cut down expenses on kerosene oil used in traditional lamps. They can charge their cell phones also with solar light. The solar lamps were also useful in providing light during night watch of standing crops against damage by forest animals.

In another survey during early 2017, it was found that 25 solar lamps were damaged and needed repairs. However, these were replaced subsequently by the distributor with new lamps.

By the close of project in April 2018, there were 286 (i.e. 87%) solar lamps out of a total 330 lamps distributed to the villagers which were in good condition and provided adequate light for in house domestic works at night.

The user households enlisted following benefits of using solar light in place of traditional kerosene lamp at night.

i. Solar lamps provide clean lighting solution in the homes, and healthier than the earlier smoke emitting kerosene lamps used for lighting.
ii. The use of solar light has ensured saving of expenses on 2 litres of kerosene per family per month.
iii. Use of solar light at night has ensured safety against poisonous insects and snakes for the family members.
iv. Solar lamp has helped the children to study at night in bright light and promoted study habits among them.

v. The women of the house feel it more convenient to cook food and do other household chores at night in the light of solar lamps.
vi. It was observed that villagers usually slept early at night after cooking and eating meals in the dim light of kerosene lamps and these were put off immediately after finishing necessary domestic chores. Now with the coming of solar lamps with bright light, the villagers, particularly women and children are inclined to remain awake for more hours and do something useful at night.
vii. Mobile charging has become possible for the villagers from the battery of the solar lamp, who otherwise used to trek downhill to get their cell phones charged at a price.

6.4. Promotion of Roof Top Water Harvesting

6.4.1 Training on Rooftop Water Harvesting

In 2015, six batches of training were planned and conducted for 131 male members in 8 villages. In these trainings, demonstration was given on installation of aluminium pipes and connecting them to the water holding pit. People were informed about the quantum of rainwater that could be stored in the tank. Visit to successful plots in the village reinforced the enthusiasm of the beneficiaries who have then taken initative to construct fence around the kitchen garden and also near the pit so that children and animals may be prevented from falling in the pit.

Prior to conducting training, team of Project workers went on an exposure visit to DRCSC, Puru lia (West Bangal) where this model of Roof Top Water Harvesting was working successfully. The team, on return shared their experience with the villagers during the training sessions.

In 2017, one more training was planned and undertaken for the families whose structures needed repair. The families were motivated through training to make good use of the structures to cultivate vegetables in their backyard, kitchen gardens.

6.4.2 Installation and Utilization of Roof Top Water Harvesting Structures

Target for the entire project period was 100 houses to be equipped with roof top water harvesting structures. Roof top water harvesting was designed as an intervention to increase availability of water in the hills by tapping water from roofs of individual houses and collecting the same in a dug out ditch. This water could be used for domestic purpose as well as to develop kitchen gardens in the homes which would add to nutritional security of the households. Given the difficult terrain, tiled roofs and limited homestead lands, this activity was undertaken after significant discussions and exposure of the team to similar interventions in other locations. Finally 100 houses in 8 villages were selected which were found suitable for roof top water harvesting structures. In two years a total of 97 structures were created in 7 villages. All the households were given silphoulene sheets to line the tanks so that the water could be stored for longer periods. In 2015, 77 households had completed

the structures and nearly 45 families had used the collected water for kitchen gardens.

In 2016, twenty new structures were created and repair work undertaken for some previous units. A total of 97 structures were made till 2016 against a target of 100. However the team observed that, the use of the tanks had dropped with some 15 families who had dismantled the pipes which carried water from the roofs to the tanks. Because they had undertaken repair of the roofs and had not reinstalled the pipes. There were also issues of non maintenance of silphoulene sheets in some cases. Overall, of the 97 structures made, this year 50 structures were effectively used for harvesting roof water.

Kitchen gardens have been promoted in **66** households who have the rooftop water harvesting tanks. Vegetable saplings were provided to those households for planting in their kitchen gardens. The families have been motivated to fence the plots and varieties of vegetables such as lady's finger, radish, brinjal, tomato, chilli and gourds have been planted in the plots. Of the 66 households, kitchen gardens were successfully developed in 45 households by using the water from the tanks. Due to non maintenance of the tanks the remaining households did not develop the gardens.

In early 2017, the project team made an assessment of all the structures to see scope of making all the structures functional. The survey showed that 40 families needed support for repair of the roof top structures so that they can make use of the harvested water for growing vegetables.

In due course the repair work was completed in identified 40 units. The repair process is a continuous activity which includes dismantling the diversion pipes and refitting them, cleaning the ditch, laying the silphoulene sheets and motivating households to take care of the structures.

Kitchen gardens have been initiated with these households so that rainwater can be adequately used. 100 households have made the fencing for developing kitchen gardens and were supported with seedlings.

Kitchen gardens were developed by 100 households in their homestead lands. The project supported them by providing healthy vegetable saplings of cauliflower, cabbage, Chilly, brinjal, tomato, bottle gourd, bitter gourd etc. Vegetable intake has increased amongst the households and farmers are keen to learn new methods of vegetable cultivation. Telvitta has largest number of families (37) who have developed kitchen garden successfully.

7
Mobilization and Organization of Sauria Pharia through Self Help Structures

As a matter of strategy, organized participation of the community in the process of sustainable development is very crucial for their own as well as development of the society at large. Keeping this in view, it was envisaged to implement project activities through the self help structures, created among the Sauria Paharia for this purpose. These village level organizations were also supposed to execute other development activities with the support of the PRI members.

7.1 Formation of 8 Women Self Help Groups (SHG) for Micro-credit activities including Income generation. Linking SHGs to NABARD and other Nationalized Banks.

It was observed during the baseline survey that Sauria Paharia of project villages had little access to their privileges and entitlements. The basic civic amenities were also not adequate in these villages. Such situation of deprivation reflected that the villagers, being unorganized, could not make concerted effort to demand their rights and privileges.

7.1.1 Functioning of SHGs

A total of 18 Self Help Groups (SHGs) were formed among Sauria Paharia women (against the target of 8 SHGs) so as to promote enabling environments for main streaming them and to enable them to have optimal access to their privileges and entitlements.

The SHGs have been meeting on an average twice in three months. Some groups have maintained regularity of savings and lending, but some groups have still lagged behind. The project team has followed up with the women members in each group and motivated them to continue with savings which provides them support during times of need. The total membership in the 18 SHG groups is 260.

Given the low literacy level among the Sauria Pahariya women, it is difficult for them to maintain SHG records. The village animator supports the groups in record maintenance. One new group with 12 members was formed in Telvetta Pradhan tola in August 2016. The new members were oriented on the role of SHGs

and the need for regular meetings and savings. All the SHG groups have been provided with a kit for managing their accounts and financial transactions. Each kit comprising of a box, registers, stamp and stamp pad, carbon papers, pen pencil and eraser are meant to help the groups to maintain their records.

The total savings generated in this period was Rs.88,801 of which Rs.24,050 has been given as internal loan to the members. Of the 18 groups, 16 groups have a bank account and 2 new groups have yet to open an account. With the given low literacy level of the group members it was considered that more intensive and innovative ways of record keeping need to be designed. At present some of them depend upon animators for record keeping. At times it was observed that the records have not been maintained properly. Badlao has organized periodic trainings for record keeping for the members to enhance their skills in maintenance of accounts.

7.1.2 Training to SHGs

i). In the quarter (Jul- Sep 2017) kits were distributed to 5 SHGs to enable them to document their meetings and transactions properly. They were given the kits consisting of registers, stamps, pass books etc.

ii). A training on leadership development for SHG members was organized on 24.9. 17 at Domidih Centre. The training was facilitated by Mrs. Sukhomoni Mardi, District Resource Person, Mahila Samakhya , Godda. The training was primarily aimed at orienting the leaders of SHGs on leadership concept, purpose of SHGs, role of members and how to work together in a collective way. 26 women members participated in the training session. The training was useful for the participants as the Resource Person was able to converse in local language with the participants. The participants were made aware of how their groups were functioning and what role they could play to make the SHGs effective.

iii).In Jan – March 2017 one training on finance and market linkages was conducted for SHG members to enable them to understand the role of markets. The members also received support for record keeping and documentation during the trainings which helped them update their records.

iv).The table below shows the trainings conducted for the SHGs between 2014- 17

Table 7.1 – Training Programmes For SHG Members

Sl. no.	Name of the training	Planned numbers	No. of training done	Participants	Period
1	Training on SHG record maintenance	2	2	23	2014, 2015
2	Leadership trainings to SHGs	2	2	50	2014
3	Training on Management of finance and market linkages	2	3	39,30,45	2014, 2015, 2017
4	posure visit for SHGs and Ex PRI members	1	1	23	2014

7.1.3 Impact of SHGs

It was observed that with initiative for self help, Sauria Paharia women have developed self confidence to take up suitable economic activities to supplement the family income. Through continuous mobilization, supported by regular orientation and awareness, training and exposure visits, a change is reflected in their attitude to pursue thrift and credit activities.

Other benefits of participation in SHGs accruing to Sauria Paharia women were as stated below:

i). SHGs have helped the women members to build and strengthen their capacity.

ii). Working through SHGs has promoted among the women interest for collective action to ameliorate their socio-economic status in the community.

iii). There was improvement in their skills on management of finance and market linkages leading to proper functioning of SHGs.

iv). There was increase in women's awareness regarding government programmes and schemes and other welfare schemes for tribals, particularly for Sauria Paharia.

As a long term impact various economic activities undertaken through women SHGs will not only help the women to contribute significantly towards food and income security of the families but also promote scope for their survival with dignity as well as improvement in their socio-economic status at the family and community levels.

7.2 Formation of 8 Watershed Committees to plan and Implement the Watershed activities, manage and maintain the common properties created by the project under land uses plans.

The basic idea behind the formation of watershed committees is to make the Sauria Paharia capable of maintaining the common properties or community assets in a proper way. It will help them to maximize benefits as well as manage and maintain the Watershed structures in a regulated way.

The Project has facilitated creation of watershed committee by enabling the water users to form committee in each village to take charge of management of the soil and water conservation structure created by the project.

7.2.1 Formation and Functions of Watershed Committees

Against the target of 8 watershed committees (one in each of 8 villages) 10 committees were formed. In Dumarkajri and Telbitta, two such committees (instead of target of one) were formed.

The watershed committees played an active role in execution of project activities especially the inputs distribution amongst families and completion of rooftop rainwater harvesting structures. Progress of work was reviewed with them from time to time. They actively participated in the planning process as well. A total of 50 meetings were held with the Watershed committee members in the year 2017 and matters related to soil and water conservation and other project activities were discussed with them.

In the quarter April – June 2017, the Watershed Committees in 3 villages actively participated in the village planning process in the project area under the Integrated Perspective Plan Exercise conducted by government of Jharkhand across the state. This has resulted in construction of farm ponds in the villages.

7.2.2 Issue Based Meetings

Meetings with the community members and Watershed committees were conducted to bring in more involvement of community representatives in programme implementation. The agenda outlined was to take forward the planned activities, decide the modus of implementation and work out a timeline for completion of tasks. Community members were also made aware of safe drinking water practices, vegetable cultivation. The following table shows the village wise issues discussed.

Table 7.2 – Issue Based Meetings with the Community Members

Sl.	Venue	No. of Participants			Discussed Topics
		Project Personnel	Community Members	Total	
01	Tamligora	03	32	35	Soil & Water Management, Road and electricity
02	Telvitta	03	36	39	Gravity Flow Water Irrigation, safe drinking water
03	Liladhoni	02	34	36	Drinking Water & Vegetable Cultivation
04	Dandagora				Drinking water and irrigation
05	Champa				Drinking Water and school management
06	Goga				Gravity flow irrigation

7.2.3 Training to Watershed Committee members on Watershed Management.

The project has provision of orienting the watershed committee members on various aspects of soil and water conservation as well as sustainable agriculture. The number of trainings to be imparted were six during the whole project period.

In the year 2015, seven batches of training of watershed committees were organized on soil, land and water management. The experts and technical officers of concerned government departments acted as Resource Persons in the training sessions. They imparted training on designing of water harvesting structures to the participants. A total of 169 members of watershed committees took part in the training programmes.

In 2016, two trainings were organized on land and water management for the committee members. In all 59 members (49 men, 10 women) attended these trainings at Domdih training centre.

In first quarter of 2017, one training for 24 watershed committee members was organized on maintenance of structures, use of WRTs and possibilities for soil and

moisture conservation. The training was conducted by officials of Krishi Vigyan Kendra (KVK) Godda as resource persons. The participants learnt about the need for soil and moisture conservation and simple techniques to improve water level in the region.

In September 2017, a training programme for members of watershed committees was organized at community centre Domdih in which 30 committee members (25 men, 5 women) participated in the deliberations. The Resource Persons from PRADAN (a local NGO with expertise on Watershed management) facilitated the training session. The participants were made aware of the concept of Watershed, Natural Resource Management, Rain water Harvesting and how soil could be conserved on hill slopes. Participants shared their experience of undertaking soil and moisture conservation activities through the project.

In all 10 batches of trainings were conducted for 252 committee members as against the target of 16 trainings, for whole of the project period.

7.3 Training on Climate Change to PRI members

The total number of Training programmes for the PRI members was 6 for the entire project period.

A total of 16 street theatres were conducted in 8 villages in 2015 and 2016 on the theme of climate change and also use of smokeless chullahs. A theatre team was oriented on the subject based on which plays were performed in the villages. People watched these street plays enthusiastically and later they were oriented on the subject of climate change and the need to understand this and adapt livelihoods in order to minimize the impact. Similar street theatres were staged in 2015 in 8 villages which helped spread awareness along with entertainment for the Sauria Paharia inhabitants of these villages.

In 2016, one training on climate change and its impact on farming was conducted for 10 representatives of Panchayati Raj Institutions in which the discussion was focused on implications of changing climate on farming in particular, water availability etc. The trainees were explained about various adaptive measures adopted by communities who lived in fragile areas vulnerable to climate change. The members understood the importance and need for awareness for afforestation and soil conservation measures undertaken through the project as a result of these discussions.

One training on Climate Change was organized on 22.8 2017 at Domidih Centre for 33 members in which 29 SHG members and 3 PRI members participated. The Resource Person from Forest Department explained to the participants the importance of Climate Change in the current context of lack of oxygen , degradation of forest and its impact, the negative effects on forest based livelihood communities and how people can cope with climate change. The participants were able to relate to the impact of changing climate on their lives.

7.4 Capacity Development and linkages with PRIs

7.4.1 SHG involvement in Panchayat level Committees

The literacy and awareness levels of Pahariya women being quite low, it has not been easy to integrate them in the mainstream decision making systems. Therefore not much headway was achieved in involvement of SHGs in Panchayat level committees. Although SHG members are taking initiative for livelihood based activities, it might take some more time for them to involve in decision making and influencing roles**.**

In the last quarter of 2016 one training on Realisation of Rights and entitlements was conducted for 17 members on 29th November 2016. The members were oriented on the current government schemes for tribal communities and how they could avail of these. The members were also informed about the Public Information Centre run by Badlao Foundation and its role is facilitating people to get their entitlements.

The following table represents the trainings held previously to build capacity of SHGs and linkage with PRIs.

Table 7.3 – Training Programmes For SHG and PRI Members

SL No.	Name of the training	Planned numbers	of .No training done	Participants	Period
1	Training on Rights and entitlements for realisation of schemes	22	**3**	**27, 27,17**	2014**, 2016**
2	ation of community Sensitis for Climate Change	16	**16**	**95**	2015**,2016**
3	Interface meeting with media and line departments	6	1	25	2014
4	Issue based consultation meeting	3	1	10	2014
5	Training on Climate Change for PRI members	6	**3**	30,10**, 29**	2016 ,2014 **2017**

7.5 Capacity Development of Community Resource Persons (CRP) for Agriculture/Demonstration plots

16 Community Resource Persons were identified in the 8 villages who supported the field Animators and Coordinator for implementation of the project activities and follow up of the activities with the individual households. The CRPs are local people who have interest in agriculture and possess communication skills. The Community Resource Persons were trained in crop management practices and also to record the household level information regarding yield and sale of crops. Although farmers books were planned to be maintained, but due to low literacy this could not be done. Therefore the CRPs maintained yield data at their levels.

7.6 Capacity Building of Para Vets

In 2017, one training on animal husbandry was conducted by a veterinary doctor on good practices related to rearing of animals especially goats, pigs and poultry. This was attended by 24 participants. The training was organized at Krishi Vigyan Kender (KVK), Godda.

Another training for Para Vets was organized at KVK and conducted by the Veterinary doctor. This dealt on the role of paravets, diseases of animals, preventive measures, and medications for specific ailments in animals. This training was held at the time of onset of monsoon as the need for livestock care increases in this season.

In 2016, one training was conducted during April to June with 22 participants who had also received goats for livelihood. The participants were oriented on goat management practices, especially on medication and feed management. Again in the last quarter October – December 2016, another training on animal husbandry was conducted with 22 male participants. Against the target of 2 trainings, 3 trainings were conducted during the project period.

7.7 Construction and Utilization of the Community Centre.

It was planned that a new community centre would be constructed at Domdih field centre and used for trainings and meetings for project and other development activities in the area and will be managed by BF after the Project was over. Likewise a community centre was constructed at Domdih with 3 rooms and one Training Hall. The community centre was located at a convenient place for the community members to gather for group meetings, attend trainings and organize community events like Nukkad Natak, Video Show etc.

Following activities were undertaken at the community centre as given below:

In 2015

i). Monthly staff meeting during the last 3 months of 2015.

ii). Staff meeting with project coordinator and visiting KKS team in November 2015.

iii). Training on Watershed Development; SHG record maintenance and linkages with banks.

In 2016

i). Monthly Staff meeting from January- December.

ii).Training on Land and Water Management for Watershed Committees.

iii).Training on Animal husbandry.

iv).Training on land soil and water management.

v).Training on Rights and Entitlements for realization of government schemes.

In 2017

i). Monthly staff meetings from January to December 2017.

ii). Training of SHG members.

iii). Training on Climate Change.

iv). Training on Leadership development.

v). Training on Watershed Management.

vi). Training on compost making for sustainable agriculture.

The trainings, orientations and sensitization sessions organized at the community centre for the project staff, the beneficiary, community members and other Stake holdes supported the implementation of project activities with a learning process to ensure development of adequate knowledge base, development of requisite skills and know how, develop skills for participatory learning, encourage team spirit and leadership as well as pursue enabling environment for sustainable development of livelihood opportunities among Sauria Paharia in a Systematic manner.

7.8 Convergence with Government Schemes/Programmes for the Development and Welfare of the Primitive Tribes

Over the years, the state government has introduced many need based schemes for the development and welfare of primitive tribes in Jharkhand. These schemes include Old Age Pension, BPL Card, Widow Pension, Job Card and other special benefits for vulnerable communities like Sauria Paharia. However, the intake of these benefits by the Sauria Paharia was not encouraging since their access to and demand for such privileges and entitlements was almost negligible. Keeping this situation in mind, the project has taken the initiative for convergence with government schemes as well as improve the capacity of the Sauria Paharia residing in project area to take their entitlements and privileges in legitimate manner.

In the first two years 2014 – 2015, linkage with Government has resulted in the following benefits to Sauria Paharia of the project villages.

i). Widow Pension could be ensured for 14 women from 8 project villages.

ii).Old age pension could be ensured for 5 women from 3 project villages.

iii).Ensured issuance of Cycle to 5 Nos. of School going girls of Dandagoda.

iv).20 farmers were enlisted for support under Kisan Credit Card in 4 villages of which 12 farmers have received Rs. 2,02,660 for agriculture purpose.

v).4 members of SHG have undergone training in Tussar cultivation and have started tussar rearing with support of PRADAN.

In 2016, the B.F. played a crucial role in the Government's Integrated Planning Initiative as a Resource Organization and helped the participatory planning process in the project villages. It resulted in construction of 4 water recharge tanks in the project villages.

The Public Information System operated by the B.F. in the project area at panchayat level has helped in enlisting eligible families for various government social security schemes. 98 Sauria Paharia tribal youth have availed pension under Primitive Tribe Pension Scheme in which a monthly pension of Rs. 600 is given to tribal youth. Other schemes that have been availed in the year include:

a). 16 HHs received Indira Awas Yojana for housing in Telvitta village,
b). old age pension of Rs. 600/ person per month received by 06 people, and
c). additionally, 5 tribal unemployed youth have applied for business development support of Rs. 100,000 each which was under consideration of the concerned government department.

In January – March 2017, efforts were made to create awareness among the tribal communities about welfare schemes and programmes of the government. As a result 42 people applied for a government sponsored pension scheme"Prime Ministers Pension Yojana" where members from families below poverty line are eligible to receive Rs. 600 as a monthly pension from the government.

In two villages- Dandagoda and Leeladhoni, farmers were provided with agriculture equipments by KVK, Godda. This includes 2 small pumpsets, 4 sprayer machines, 10 hand sprayers. This linkage was possible due to Badlao's liaisoning with KVK and sourcing agricultural inputs like seeds and saplings from KVK.

In April – June 2017, efforts were made to ensure access to government schemes and entitlements for the Primitive Tribal families and follow up on the Prime Minister's Pension Scheme for Primitive Tribal communities for which applications were submitted in the previous quarter. 42 households of Senakatar, Champa and Tamligora have received pension of Rs. 600/month /household under this scheme.

Other schemes received by the beneficiaries are

a) Old age pension- 16 households (Rs. 600/month/ household)
b) Physically Challenged pension – 7 households (Rs. 600/ household)
c) Prime Ministers Housing Scheme- 12 households
d) Two farmers were also supported for Farm pond development under MGNREGA programme.

In July – September 2017, 42 households of Tamligora, Liladhoni and DumarKajri applied for Mukhyamantri Adim Janjati Pension Yojona for primitive tribal families. 10 households of Tamilgora have received the pension of Rs. 600/month.

In October – December 2017, under the MukhyaMantri Adim Janajati Gram Vikas Yojana one SHG (Mahila Sabha, Telvitta) and five educated and umemployed youth received support of Rs. 1,00,000 by the SHG and Rs.2 lakhs each by the youth respectively. Thus, **11 lakhs** of rupees have been leveraged for the people of project area. This support will help the selected youth to invest in some enterprise which will help them earn a better income. The Project team and Badlao Foundation did considerable follow up for helping the selected members to apply for and thereafter avail the benefit of this scheme.

Table 7.4 - Summary of Project Activities and Achievements regarding soil and water conservation and provision of Basic Facilities(2013 – 2018).

SNo.	Activities	Tamligora	Telvitta	Dandagoda	Liladhoni	Dumarkajri	Goga	Senakatar	Champa	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Achievement (%)	Origional /Revised Target
1	WRT (No.)	1	1	1	1					4 (100%)	4
2	Weir (No.)		1							1 (50%)	2
3	Jalkund (No.)				1					1 (100%)	1
4	Spring Wells (No.)		1			1			1	3 (100%)	3
5	Land levelling (Acres)	24 Ac	22.86 Ac	7.7 Ac	22.6 Ac	7.65 Ac	0.50 Ac	3.70 Ac	2.8 Ac	91.81 Ac (80.2%)	110/114.5 Acres
6	Land bunding (Acres)	5.40 Ac	0.2 5 Ac		3 Ac	3 Ac				11.6 5 (25%) Acres	46.5 Acres
7	CCT (Acres)	6.00 Ac	4.00 Ac		1.50 Ac	2.00 Ac	2.00 Ac	10.30 Ac	2.00 Ac	27.80 (50.5%) Acres	55 Acres
8	Gully plugging , B oulder Bunds (Acres)	7					5			12 (63.15%)	19
9	Plantation (No.)	55	112	12						179 (<20%) Survival	25000 Trees
10	Smokeless Chullah (No.)	67	81	48	15	29	14	13	26	293 (97.7%)	300
11	Solar Lamps (No.)	77	98	53	15	26	19	18	24	330 (>100%)	300
12	Compost pit (No.)	6								6 (85.7%)	7
13	Drinking water wells (No.)	2	1	1	1	1	2			8 (80%)	10
14	Roof Top Water Harvesting Tanks (No.)	35	20	14	1	17	7	3		97 (97%)	100

15	Gravity Flow Water Irrigation system (No.)		1							1 (100%)	1

Source: *Annual Report - 2017*

Challenges faced in project management

Efforts have been made by project personnel to implement activities as per the annual work plans. Several challenges were incurred during the implementation of the project which the project team has strived to resolve to the best of their capacities.

i). Frequent changes in project personnel, especially at the Project Coordinator level led to gaps in project planning and implementation.

ii). Difficult terrain of the project area put a challenge to monitor activities on a regular basis.

iii).The timid Pahariya community was not easily open to outsiders and a lot of time and effort was spent to build rapport and take up intensive work among them.

iv).Raising local contribution as per the project commitment has proved to be a challenge. Pahariyas being cash deficit communities and meager government investment in the region proved a barrier in raising local contribution, thereby affecting many activities.

8
Impact Survey of Sauria Paharia Villages: A Frame Work

8.1 Objectives and Methodology of the Impact Study

8.1.1 Objectives

i).To compare planned project objectives and impacts with actually achieved outcomes and impacts.

ii). To study the long term impacts, both intended and unintended, of project intervention on Sauria Paharia population and their immediate environment (Land, Natural Resources, Climate).

iii). To examine the question of sustainability, lessons learnt and future strategy examined in the light of the achievements of the project whereby Sauria Paharia enjoy improved living conditions by tapping climate change resistant Livelihood opportunities and improved access to government services and facilities.

8.1.2 Methodolgy

8.1.2.1 Study Area

The eight Sauria Paharia villages and 339 households living in these villages, the community resources created in these villages through the project and SHGs and Watershed Management organizations created in the project area constitute the universe for the impact assessment.

8.1.2.2 Methods of Data Collection from Primary and Secondary Sources

Both primary data and secondary information were collected using the following data collection techniques/tools, from primary and secondary sources.

Primary Source

- Impact Survey Household Schedule.
- Focused Group Discussion (FGD) Format.
- Key informant Schedule for Stake Holders.
- Physical Verification of Watershed Structures Created Through the Project.
- Case Studies of Successful Interventions in the Project Area.
- Meetings with SHGs and Watershed Committees.
- Meetings with Project Staff.

Secondary Sources

Perusal of the following documents, maintained at the Project office, was undertaken to collect necessary information.

- Annual Progress Reports of the Project from January 2015 to April 2018.
- Monitoring records maintained by the project.
- Baseline Survey Report of the Project.
- Project Proposal submitted by Badlao Foundation on Sustainable Development of Sauria Paharia to KKS, Germany.
- Rainfall Data (2014 to 2017) from Office of District Agriculture Officer, Godda.
- Report of assessment of Development Projects among Sauria Paharia in Santhal Pargana, BITM, Ranchi, 2016.
- Completion Report (2013-2018) of the Project.

8.1.2.3 Field Work for Data Collection

- All the data collection tools were prepared and pretested in the field before finalization.
- A team of field Investigators, under the leadership of an expert social scientists was constituted.
- The team members were given training on methods of data collection and field work.

The field work for impact survey was conducted in the First quarter of 2018, i.e. immediately after completion of the implementation phase of the project.

The major part of the primary data was collected through the household schedule. The investigators visited all the 339 Sauria Paharia households of 8 project villages. Head of the household was contacted who was interviewed with the help of household schedule containing questions on impact of different components of the project on socio-economic conditions of the household.

The field staff of the project helped and facilitated the investigators in reaching the hill top villages establishing rapport with the respondents and eliciting necessary information from them.

In the meantime FGD and meetings were held with the key informants and SHGs and Watershed Committees. Case Studies of specific interventions such as Water harvesting structure, Kitchen gardens, Solar lamps, Smokeless Chulhas etc. were prepared through on the spot visits and interviews on the benefits of these interventions on the way of life of Sauria Paharia.

Annual Reports and other relevant records, MIS data maintained by the project office were collected and necessary information was retrieved from these documents.

8.1.2.4 Data Processing, Tabulation and Analysis

The household data has been computerized and necessary frequency tables with percentages have been prepared for each type of question. Averages and means were calculated wherever required. The Data has been analyzed both at village level as well as project level. Various indices were constructed which were compared for the period before the project and during the implementation phase to assess the change, if any, as a result of intervention.

While the quantitative data was tabulated, the qualitative information was content analyzed. The results have been discussed and presented in the chapters that follow.

Photographs of various activities, situations, events and various water harvesting structures have been placed at appropriate places in the Report to show the visual impact of various activities on the day to day life of project population.

8.1.2.5 Organization of the Report

The report has been organized in various chapters. The first chapter gives brief description of the project implementation agency Badlao Foundation. It is followed by description of the region where the project is located. It discusses the geographical situation, land, climate, and people of Santhal Pargana division, Godda district and Sunder Pahari block, the natural abode of Sauria Paharia tribe.

The next chapter introduces the project on Sustainable Development of livelihood and Adaptive Response to Climate Change among the Sauria Paharia tribe. The fourth chapter describes in brief the objectives, methodology and main findings and conclusions of the Baseline Study conducted among Sauria Paharia of 8 project villages in the year 2013.

The fifth, sixth and seventh chapters deal mainly with activities and achievements of the project during the four years of implementation from 2014 to 2017. Accordingly, fifth chapter has analysed the activities and accomplishments in the area of natural resource management, sustainable agricultural practices and other income generation activities based on animal husbandry, and NTFP. The sixth chapter discusses the efforts and achievements in relation to sustainable development of basic facilities like ensuring safe and secure drinking water, promotion of renewable energy devices such as smokeless chullah for cooking and solar lamp for lighting at night.

Chapter seven deals with the efforts made in the direction of organizing the Sauria Paharia through formation of Self Helps Structures and mobilize them for sustainable development of livelihoods among them.

The eighth chapter deals with the frame work of Impact Survey conducted at the closure of the project. The nineth chapter has focused on socio-demographic changes experienced by Sauria Paharia.

In the Tenth chapter impact of the planned development on living conditions and environments of Sauria Paharia has been analysed. The eleventh chapter summarises the main findings and conclusions under the title of Survival to sustainable development of Livelihoods. The ultimate chapter deals with future challenges and opportunities for enhancing livelihood opportunities among the Sauria Paharia of Sunderpahari block with implication for the tribe at large. References of reports, books used in preparation of the report have been placed after the concluding chapter.

9
Socio - Demographic Changes among Sauria Paharia

9.1 Population Composition and Change

At the time of impact survey during January-February 2018, there were 339 households distributed in 8 Sauria Paharia villages. The household population was 1541 persons. The largest number of households (86) was in Telvitta, followed by Tamligira (78) and Dandagora (67) respectively. Liladhoni was the smallest village with 15 households.

Table 9.1: Panchayat and Village-wise Distribution of HHs. by Population and Av. HH Size

Block	Panchayat	Village	Hamlet	No. of HHs.	HH Population	Average HH Size
Sundar Pahari	Paharpur	Champa	Champa	25	100	4.00
	Kairasole	Tamligora	Dumarpalam	31	140	4.52
			Tamligora	47	230	4.89
		Dumarkajeri	Dumarkajeri	19	85	4.47
			Kairkuria	6	29	4.83
		Liladhoni	Liladhoni	15	68	4.53
		Goga	Goga	19	86	4.53
		Senakatar	Senakatar	24	89	3.71
		Telvitta	Bara Tola	29	144	4.27
			Santhal Tola	17	80	4.71
			Pradhan Tola	40	171	4.28
		Dandagora	Dandagora	67	319	4.76
Total				**339**	**1541**	**4.55**

Source: *Field Data*

The average family size for all the villages was 4.55 persons. While Telvitta have highest family size of about 5 persons, Senakar has the lowest with 3.71 persons per household. The household size has increased from 4.33 (baseline) to 4.55 persons during impact survey.

Population Change – During the last four years of project implementation (2014 – 2017) the number of households have increased from 328 (baseline survey) to 339. Thus, 11 new households have come up in the project area, mostly due to splitting up of old households over the years.

The household population has also witnessed increase from 1420 persons (baseline) to 1541 persons during the last four years. There was increase of 121 persons. Incidentally, there were 226 births and 105 deaths reported from the project area for the same period, therefore there was an increase of 121 persons as a result of difference between births and deaths in the project population.

Table 9.2: Panchayat and Village-wise Births and Deaths in the HHs since Inception of the Project (2014 - 17)

Panchayat	Village	No. of Birth			No. of Death		
		Male	Female	Total	Male	Female	Total
Pahadpur	Champa	14 56.00	11 44.00	25 100.00	4 57.14	3 42.86	7 100.00
Kairasol	Tamligora	36 56.25	28 43.75	64 100.00	19 70.37	8 29.63	27 100.00
	Dumarkajeri	7 41.18	10 58.82	17 100.00	2 100.00	 0.00	2 100.00
	Liladhoni	5 38.46	8 61.54	13 100.00	 0.00	1 100.00	1 100.00
	Goga	14 73.68	5 26.32	19 100.00	14 73.68	5 26.32	19 100.00
	Senakatar	13 52.00	12 48.00	25 100.00	3 30.00	7 70.00	10 100.00
	Telvitta	23 57.50	17 42.50	40 100.00	21 61.76	13 38.24	34 100.00
	Dandagora	13 56.52	10 43.48	23 100.00	2 40.00	3 60.00	5 100.00
Total		**125** 55.31	**101** 44.69	**226** 100.00	**65** 61.90	**40** 38.10	**105** 100.00

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Interestingly, the household data also revealed an increase of 121 persons between baseline and impact survey of the project area.

Thus, it may be safe to say that the number of households and household population in the project area has shown increase during the last four years.

Table 9.3: Panchayat and Village-wise Distribution of Households by Religion

Panchayat	Village	Tribal Religion		Christian		Total	
		Number	Percent	Number	Percent	Number	Percent
Pahadpur	Champa	25	100.00	-	-	25	100.00
Kairasol	Tamligodha	76	97.44	2	2.56	78	100.00
	Dumarkajari	25	100.00	-	-	25	100.00
	Liladhoni	15	100.00	-	-	15	100.00
	Goga	16	84.21	3	15.79	19	100.00
	Senakatan	24	100.00	-	-	24	100.00
	Telbhitha	43	50.00	43	50.00	86	100.00
	Dandaghoda	63	94.03	4	5.97	67	100.00
Total		**287**	**84.66**	**52**	**15.34**	**339**	100.00

Source: Field Data
Note: Figure in bracket denotes percentage.

9.2 Religion

It is evident from Table 9.3 above that majority of the Sauria Paharia households (84.66%) believe in their traditional tribal religion. Only 15.34% are Christians and belong to Telvitta village. The households in Telvitta are equally divided between tribal religion and Christians respectively.

9.3 Type of Family

Among the 339 families only 18 (5.31%) are single member families; of them 7 (2.6%) have men and 11 (3.25%) have women as head of the family respectively.

Most of the families (321) have two and more members in the family. Among them 269 (79.35%) are male headed families and 52(15.34%) are female headed families respectively.

Table 9.4: Panchayat and Village-wise Distribution of HHs. by Type Head of the Family

Panchayat	Village	Category of the Family				
		Male Headed	Female Headed	Single Headed		Total
				Male	Female	
Pahadpur	Champa	22 88.00	2 8.00	1 4.00	-	**25** **100.0**
Kairasol	Tamligora	68 87.18	9 11.54	-	1 1.28	**78** **100.0**
	Dumarkajeri	17 68.00	5 20.00	1 4.00	2 8.00	**25** **100.0**
	Liladhoni	12 80.00	2 13.33	-	1 6.67	**15** **100.0**
	Goga	19 100.0	-	-	-	**19** **100.0**
	Senakatar	22 91.67	2 8.33	-	-	**24** **100.0**
	Telvitta	64 74.42	17 19.77	1 1.16	4 4.65	**86** **100.0**
	Dandagora	45 67.16	15 22.39	4 5.97	3 4.48	**67** **100.0**
Total		269 79.35	52 15.34	7 2.06	11 3.24	**339** **100.0**

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

Thus, the project population lives in families where a man, his wife and children (in some cases other family members such as father, mother, brother, sister) live together sharing common hearth, purse and dwelling. More than 80% of these families were headed by the eldest man of the family who wielded influence and power over other family members in household matters.

Of the female headed families, more than 60% of these are found in Telvitta and Dandagora villages.

9.4 Sex Composition and Sex Ratio

Of H.H. Populations among the 1541 persons of all the villages, 788 (51.14%) are males and 753 (48.86%) are females. Thus, the number and percentage of males is higher than that of females in the entire project population.

If we look at sex composition at the village level, then in Liladhoni, Tamligora and Champa, the percentage of females is higher than that of males.

Sex Ratio i.e. females per 1000 males is 956 for all the villages. But it varies from village to village. It is highest (1428) for Liladhoni and lowest for Telvitta (837). In Champa, Liladhoni and Telvitta sex ratio was in favour of women. The other 5 villages have sex ratio lower than the average for all the villages.

The overall Sex Ratio has declined in all (except Liladhoni) project villages in the last four years. It has come down from 1031 females per thousand male (2014) to 956 Females per thousand males in 2018. The table 9.5 below gives clear picture of decline in Sex Ratio over the last four years. It appears the male population has grown faster than their counter parts.

Table 9.5 – Village Wise Distribution of HH Population by Sex and Sex Ratio

Sno.	Village	Household Population			Sex Ratio F% M	
		Male	Female	Total	2018	2014
1	Champa	49 (49.00%)	51 (51.00%)	100 (100.00)	1041	1229
2	Tamligora	180 (48.65%)	190 (51.35%)	370 (100.00)	1055	1138
3	Dumarkajri	59 (51.75%)	55 (48.25%)	114 (100.00)	932	1137
4	Liladhoni	28 (41.18%)	40 (58.82%)	68 (100.00)	1428	1143
5	Goga	45 (52.33%)	41 (47.67%)	86 (100.00)	911	1190
6	Senakatar	47 (52.81%)	42 (47.19%)	89 (100.00)	894	980
7	Telvitta	215 (54.43%)	180 (45.57%)	395 (100.00)	837	941
8	Dandagora	165 (51.72%)	154 (48.28%)	319 (100.000	933	1137
9	All Villages	788 (100.00) (51.14%)	753 (100.00) (48.86%)	1541 (100.00)	956	1031

Source: *Field Data*

9.5 Age Composition by Sex

The age and sex composition of H.H. Population reveals that more than half (i.e. 51.46%) of population is of child and adolescent segment between 0 – 18 years, 47.69% are adults between 19 to 60 years. Less than one percent is above 60 years of age. As compared to 2014 baseline data, the percentage of young population has increased whereas that of adults and aged persons has declined respectively.

Table 9.6: Distribution of Household Population by Age Group and Sex

Age Group (in Years)	Male	Female	Total
0 - 6	182 54.17	154 45.83	336 100.00
7 - 18	239 52.30	218 47.70	457 100.00
19 - 40	249 52.64	224 47.36	473 100.00
41 - 60	118 45.04	144 54.96	262 100.00
More than 60	-	13 100.00	13 100.00
Total	**788** 51.14	**753** 48.86	**1541** 100.00

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

9.6 Literacy and Educational status of HH Population

Literacy Rate

Overall literacy rate for the 8 project villages was 24.85% which was below the literacy rate of Sunder Pahari Block and Godda district respectively.

The literacy rate is higher among males than among females. While literacy rate of males was 34.40% for females it was just 14.87%.

The literacy rate also varies from village to village in the project area. Dandagora has the highest literacy, whereas Goga has the lowest rate of literacy.

Similarly, Dandagora and Telvitta have higher literacy than the overall literacy as well as female literacy for the project area. Again Dandagora and Liladhoni have higher male literacy as compared to that of project area as a whole

Table 9.7: Village-wise Literacy Rate by Sex

Village	Male			Female			Total		
	Literate	Illiterate	Total	Literate	Illiterate	Total	Literate	Illiterate	**Total**
Champa	15 30.61	34 69.39	49 100.00	3 5.88	48 94.12	51 100.00	18 18.00	82 82.00	**100** **100.00**
Tamligodha	61 33.89	119 66.11	180 100.00	21 11.05	169 88.95	190 100.00	82 22.16	288 77.84	**370** **100.00**
Dumarkajari	18 30.51	41 69.49	59 100.00	7 12.73	48 87.27	55 100.00	25 21.93	89 78.07	**114** **100.00**
Liladhoni	12 42.86	16 57.14	28 100.00	6 15.00	34 85.00	40 100.00	18 26.47	50 73.53	**68** **100.00**
Goga	6 13.33	39 86.67	45 100.00	1 2.44	40 97.56	41 100.00	7 8.14	79 91.86	**86** **100.00**
Senakatan	8 17.02	39 82.98	47 100.00	2 4.76	40 95.24	42 100.00	10 11.24	79 88.76	**89** **100.00**
Telbhitha	73 33.95	142 66.05	215 100.00	37 20.56	143 79.44	180 100.00	110 27.85	285 72.15	**395** **100.00**
Dandaghoda	78 47.27	87 52.73	165 100.00	35 22.73	119 77.27	154 100.00	113 35.42	206 64.58	**319** **100.00**
All	271 18.21	517 34.74	788 100.00	112 14.87	641 85.13	753 100.00	383 24.85	1158 75.15	**1541** **100.00**

Source: *Field Data*

Educational Level of HH Population

Educational level of HH Population, as shown in the table 9.8 below reveals that the highest level of education attained is college for males and class-XII for girls respectively. However, majority of the educated males and females have acquired education upto middle standard (i.e. class VIII).

The level of education also varies from village to village among both the sexes. In Dandagora and Tamligora highest level of education attained by males was college level, class XII in Telvitta, class X in dumerkajri and primary (class IV) in Champa, Liladhoni, Goga and Senakatar villages respectively.

Similarly, highest level of education attained by females was class XII for Dandagora, class X for Telbitta, and class VIII for Tamligora and Dumerkajri, primary (class IV) for Liladhoni, and basic literacy for Champa and Senakatar and Goga respectively.

Table 9.8: Distribution of HH Population by their Educational Status

Literacy Level	Male	Female	Total
Illiterate	517 (65.61)	641 (85.13)	1158 (75.15)
Literate	99 (12.56)	52 (6.91)	151 (9.80)
Class I-IV	90 (11.42)	32 (4.25)	122 (7.92)
Class V-VI	42 (5.33)	21 (2.79)	63 (4.09)
Class IX-X	23 (2.92)	5 (0.66)	28 (1.82)
Class XI-XII	13 (1.65)	2 (0.27)	15 (0.97)
College	4 (0.51)	-	4 (0.26)
Total	**788 (100.00)**	**753 (100.00)**	**1541 (100.00)**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Thus, males were better placed than females in terms of literacy and attainment of educational level among Sauria Paharia of project area.

Similarly, Telbitta, Dandagora, Tamligora and Dumarkajri have performed better than Champa, Liladhoni, Goga and Senakatar in terms of attainment of educational levels.

10
Impact on Living Conditions and Environment of Sauria Paharia

10.1 Impact on Availability of Food

Soil and water conservation activities were undertaken to improve the food security of the Sauria Paharia of project villages by safeguard and sustainable utilization of natural resources and sustainable agricultural practices.

Table 10.1: Village-wise Perception of Respondents on Status of Availability of Food

Status on Availability of Food in Households During the Project Period in Comparison with the Status before the Intervention of the Project				
Village	**Decreased**	**Increased**	**No Effect**	**Total**
Champa	-	25 (100.00)	-	25 (100.00)
Tamligora	-	75 (96.15)	3 (3.85)	78 (100.00)
Dumarkajeri	1 (4.00)	13 (52.00)	11 (44.00)	25 (100.00)
Liladhoni	-	10 (66.67)	5 (33.33)	15 (100.00)
Goga	-	6 (31.58)	13 (68.42)	19 (100.00)
Senakatar	-	24 (100.00)	-	24 (100.00)
Telvitta	7 (8.14)	42 (48.84)	37 (43.02)	86 (100.00)
Dandagora	9 (13.43)	39 (58.21)	19 (28.36)	67 (100.00)
Total	**17 (5.01)**	**234 (69.03)**	**88 (25.96)**	**339 (100.00)**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

The villagers were asked to give their opinion whether or not the relevant interventions have increased the food security in the area during the project period. It is clear from Table 10.1 that majority of the respondents (69.03%) has claimed that the food security has increased during the project period in comparison to that

before implementation of the project. However, one fourth of the respondents (26%) did not perceive any change in availability of food. 5% of them claimed that availability of food has decreased during the project period in comparison to pre-project year. The perception about food security varied among the different villages. While in Champa, Tamligora and Senakatar most of the respondents perceived increase in food availability; in Goga and Telvitta around half of them perceived either no change or decrease in food availability.

10.2 Impact on Availability of Nutritious Food

Table 10.2: Village-wise Perception of Respondents on Status of Availability of Nutritious Food

Status on Availability of Food in Households During the Project Period in Comparison with the Status before the Intervention of the Project				
Village	**Decreased**	**Increased**	**No Effect**	**Total**
Champa	-	25 100.00	-	25 100.00
Tamligora		75 96.15	3 3.85	78 100.00
Dumarkajeri	1 4.00	13 52.00	11 44.00	25 100.00
Liladhoni	-	10 66.67	5 33.33	15 100.00
Goga	-	6 31.58	13 68.42	19 100.00
Senakatar	-	24 100.00	-	24 100.00
Telvitta	7 8.14	42 48.84	37 43.02	86 100.00
Dandagora	9 13.43	39 58.21	19 28.36	67 100.00
Total	**17** 5.01	**234** 69.03	**88** 25.96	**339** 100.00

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Table 10.2 above has shown the villager's perception of impact on availability of nutritious food. Majority of the respondents believed that availability of nutritious food has improved during the project period as compared to pre-project year. The villager's perception varied from village to village. It reveals that in villager's opinion the impact on availability of nutritious food was not uniform in the project area.

10.3 Impact on Availability of Water

It was envisaged that renovation of 8 existing drinking water wells in the villages taken up during the project period would improve the availability of secure and safe drinking water and sustainable source of water for daily use of the entire project population of 8 villages.

Table 10.3: Village-wise Perception of Respondents on Status of Availability of Water

Status on Availability of Water in Households During the Project Period in Comparison with the Status before the Intervention of the Project				
Village	**Decreased**	**Increased**	**No Effect**	**Total**
Champa	0.00	25 100.00	0.00	25 100.00
Tamligora	0.00	78 100.00	0.00	78 100.00
Dumarkajeri	0.00	25 100.00	0.00	25 100.00
Liladhoni	0.00	15 100.00	0.00	15 100.00
Goga	0.00	0.00	19 100.00	19 100.00
Senakatar	0.00	24 100.00	0.00	24 100.00
Telvitta	0.00	1 1.16	85 98.84	86 100.00
Dandagora	0.00	50 74.63	17 25.37	67 100.00
Total	0.00	**218** 64.31	**121** 35.69	**339** 100.00

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

It is evident from Table 10.3 that majority (64.31%) of the responded agreed that availability of water has improved during the project period. However, more than one third of them, particularly, from Goga, Telbitta and Dandagora did not perceive any change in water availability in the respective villages. It may be because there was no new addition to the existing water resources and only the existing old wells in 3 villages were renovated during the project period.

10.4 Impact on Status of Clothes and Garments

It is generally observed that any extra income in the family is preferably spent on items of personal use such as clothes and garments. In the case of Sauria Paharia also more than 80% of them have perceived that status of quantity as well as quality of clothes and garments used by them has improved during the project period as compared to the status before the project intervention.

Table 10.4: Village-wise Perception of Respondents on Status of Clothes and Garments

Status on Availability of Clothes and Garments in Households During the Project Period in Comparison with the Status before the Intervention of the Project							
Village	**Quantity**			**Quality**			**Total**
	Decreased	Increased	No Effect	Decreased	Increased	No Effect	
Champa	-	25 100.00	-	-	23 92.00	2 8.00	25 100.00
Tamligora	-	71 91.03	7 8.97	-	71 91.03	7 8.97	78 100.00
Dumarkajeri	-	19 76.00	6 24.00	-	20 80.00	5 20.00	25 100.00
Liladhoni	-	9 60.00	6 40.00	-	11 73.33	4 26.67	15 100.00
Goga	-	11 57.89	8 42.11	-	11 57.89	8 42.11	19 100.00
Senakatar	-	24 100.00	-	-	10 41.67	14 58.33	24 100.00
Telvitta	1 1.16	67 77.91	18 20.93	1 1.16	67 77.91	18 20.93	86 100.00
Dandagora	1 1.49	63 94.03	3 4.48	1 1.49	63 94.03	3 4.48	67 100.00
Total	**2** 0.59	**289** 85.25	**48** 14.16	**2** 0.59	**276** 81.42	**61** 17.99	**339** 100.00

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

10.5 Impact on Housing Situation

The pattern of house structures in tribal houses is different from that in plain areas. The Sauria Paharia tribals completey depend on forests for the construction materials needed to build a house. Most of their houses are built of mud and have tiled roof. Most of the families have a single room in the house. Only 25% houses have double rooms. There was no provision for improving the housing situation under the project, however, improvement in economic situation of the project people, seemed to have led to structural improvement in construction of houses in some of the households.

Table 10.5: Village-wise Perception of Respondents on Status of Pattern of House Types

Status on of Character of House During the Project Period in Comparison with the Status before the Intervention of the Project				
Village	**Decreased**	**Increased**	**No Effect**	**Total**
Champa	2 8.00	4 16.00	19 76.00	25 100.00
Tamligora	16 20.51	48 61.54	14 17.95	78 100.00
Dumarkajeri	4 16.00	15 60.00	6 24.00	25 100.00
Liladhoni	2 13.33	12 80.00	1 6.67	15 100.00
Goga	-	1 5.26	18 94.74	19 100.00
Senakatar	-	1 4.17	23 95.83	24 100.00
Telvitta	-	28 32.56	58 67.44	86 100.00
Dandagora	2 2.99	20 29.85	45 67.16	67 100.00
Total	**26 7.67**	**129 38.05**	**184 54.28**	**339 100.00**

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

It is evident from Table 10.5 above that 55% of the respondents have perceived no change in housing situation. Around 40% of the respondents, particularly from Tamligora, Dumarkajri, Liladhoni have perceived improvement in housing situation during the project period as compared to pre-project situation.

10.6 Impact on Utilization of Health Services by the Villages.

Table 10.6: Village-wise Perception of Respondents on Status of Utilization of Health Services

Village	**For Treatment Purpose Do Avail Service From**										
	Before Project Being Started					**During Last Year (2017)**					**Total**
	Hospital		**Quacks**	**Herbal**	**Black Magic**	**Hospital**		**Quacks**	**Herbal**	**Black Magic**	
	Govt.	**Pvt.**				**Govt.**	**Pvt.**				
Champa	1 4.00	25 100.00	25 100.00	25 100.00	25 100.00	24 96.00	6 24.00	19 76.00	21 84.00	18 72.00	**25 100.00**
Tamligodha	-	9 11.54	68 87.18	77 98.72	74 94.87	44 56.41	15 19.23	69 88.46	78 100.00	75 96.15	**78 100.00**
Dumarkajari	1 4.00	-	2 8.00	25 100.00	25 100.00	1 4.00	8 32.00	21 84.00	25 100.00	24 96.00	**25 100.00**
Liladhoni	1 6.67	-	2 13.33	15 100.00	15 100.00	7 46.67	2 13.33	13 86.67	14 93.33	14 93.33	**15 100.00**
Goga	-	19 100.00	19 100.00	19 100.00	9 47.37	-	19 100.00	19 100.00	19 100.00	9 47.37	**19 100.00**
Senakatan	-	23 95.83	24 100.00	24 100.00	24 100.00	24 100.00	1 4.17	5 20.83	17 70.83	13 54.17	**24 100.00**
Telbhitha	17 19.77	69 80.23	83 96.51	73 84.88	27 31.40	16 18.60	67 77.91	77 89.53	66 76.74	26 30.23	**86 100.00**
Dandaghoda	19 28.36	32 47.76	46 68.66	47 70.15	41 61.19	31 46.27	24 35.82	51 76.12	44 65.67	40 59.70	**67 100.00**
Total	**39 11.50**	**177 52.21**	**269 79.35**	**305 89.97**	**240 70.80**	**147 43.36**	**142 41.89**	**274 80.83**	**284 83.78**	**219 64.60**	**339 100.00**

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

Table 10.6 above gives the village wise perception of respondents on utilization of health services by the villagers during project period. The table reveals that in the opinion of the respondents, the Sauria Paharia continued to avail the health services during the project period in the same way as before the project. Most of them continued to depend upon quacks, herbal medicine and magical healing (Jadu-Tona) during illness. The dependence on hospitals, (particularly government hospitals) was lowest mainly due to their distant location. However, due to health awareness created during the project period, influence of magical healing and herbal medicine seemed to have reduced to some extent, and that of government hospitals has improved as compared to pre-project period. It is also evident from the Table that perception of respondents regarding utilization of health services from different sources varied from village to village in the project area.

10.7 Perception of Impact on Health Status of household Members

The health status of a population is influenced by many factors such as food security, nutrition, safe drinking water, sanitation, clean environment, health awareness and easy access to health and medical services in the area. Though, there was no direct intervention to improve the health status of the Sauria Paharia in the project area, the programs on improvement of income and food security, provision of safe drinking water and alternative sources of energy for cooking and lighting and programs for general awareness taken up during the project period seem to have collectively contributed towards enhancing the health status of the project population.

Table 10.7: Village-wise Perception of Respondents on Status of Health of HH Members

Status on Health in Households During the Project Period in Comparison with the Status Before the Intervention of the Project				
Village	**Decrease**	**Increase**	**No Effect**	**Total**
Champa	-	25 100.00	 0.00	25 100.00
Tamligodha	-	75 96.15	3 3.85	78 100.00
Dumarkajari	-	20 80.00	5 20.00	25 100.00
Liladhoni	-	13 86.67	2 13.33	15 100.00
Goga	-	8 42.11	11 57.89	19 100.00
Senakatan	-	21 87.50	3 12.50	24 100.00
Telbhitha	20 23.26	47 54.65	19 22.09	86 100.00
Dandaghoda	22 32.84	39 58.21	6 8.96	67 100.00
Total	**42** **12.39**	**248** **73.16**	**49** **14.45**	**339** **100.00**

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

Table 10.7 above hav9s shown that almost three fourth of the respondents considered that health status of project population has improved during the period of intervention as compared to the period prior to the intervention. More than 25% feel that there was either decline or no change in the health status of the people during the project years. The response on health status of population was not uniform and varied from village to village within project area. Respondents of Goga, Telbitta and Dandagora seemed to be more pessimistic than others regarding any change in the health status of their villages during the project period.

10.8 Perception of Respondents on Impact of Project on Migration

The baseline survey of 8 Sauria Paharia villages conducted before launching the project has revealed that during lean agricultural season, almost one third of the population (particularly men) migrated to other places in search of wage labour. Two thirds of these migrants belonged to three villages of Telbitta, Tamligora and Dandagora. Significantly almost all the adult males of Liladhoni and Senakatar moved out to places within and outside the state in search of living.

During the project period (2014 to 2017) major interventions were made to increase income and food security of the Sauria Paharia living in these 8 project villages through safeguard and sustainable use of natural resources, sustainable agricultural practices and supplementary livelihood activities based on Animal husbandry and Non-Timber Forest Produces (NTFP) respectively. One of the main targets of these interventions was to reduce the migration among the Sauria Paharia by developing sustainable agriculture as well as providing alternative sources of employment and income on regular basis.

Soil and water conservation activities including land leveling and creation of water harvesting structures in the project villages resulted in massive employment and earning of wages within the project area. The share of wage income in the total family income has improved from 8% in 2014 to 15% in 2018. While earlier the wage income came mostly from remittance sent by the migrants, now in the project period major part of wage income was earned locally through agriculture labour, wage labour on land development and renovation of water resources in the project area. However, one third of income from daily wages continued to come from migrant labours.

It can be safely inferred from the above analysis that migration among Sauria Paharia has certainly declined during the project period as a result of creation of new employment opportunities in the local area through land and water development, agriculture, kitchen gardening, NTFP and petty business activities.

Table 10.8: Village-wise Perception of Respondents on Status of Migration

Status on Migration in Households During the Project Period in Comparison with the Status Before the Intervention of the Project				
Village	**Decrease**	**Increase**	**No Effect**	**Total**
Champa	22 88.00	1 4.00	2 8.00	25 100.00
Tamligodha	74 94.87	3 3.85	1 1.28	78 100.00
Dumarkajari	23 92.00	-	2 8.00	25 100.00
Liladhoni	14 93.33	1 6.67	-	15 100.00
Goga	18 94.74	-	1 5.26	19 100.00
Senakatan	18 75.00	4 16.67	2 8.33	24 100.00
Telbhitha	38 44.19	10 11.63	38 44.19	86 100.00
Dandaghoda	39 58.21	1 1.49	27 40.30	67 100.00
Total	**246** **72.57**	**20** **5.90**	**73** **21.53**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

As shown in Table 10.8 above majority (72.57%) of the respondents perceived that migration of people from project villages has declined during the project period as compared to pre-project years. However, 22% of them particularly from Telbitta and Dandagora perceived no change in the extent of migration during the project period.

10.9 Impact on Annual Family Income and Economic Status

The main aim of the project intervention was to enable the Sauria Paharia of 8 project villages to enjoy improved living conditions by tapping climate change resistant livelihood opportunities and improved access to government services. Likewise the project envisaged that the target population should increase their income through sustainable natural resource management, sustainable agricultural practices and other income generation activities such as animal husbandry and NTFP. One of specific objective of the project was to increase the annual income of the Sauria Paharia by atleast Rupees 2500 (i.e. 10% of their average current income).

Table 10.9: Village-wise Annual Household Income (in Rs.)

Village	Champa	Tamligodha	Dumarkajari	Liladhoni	Goga	Senakatan	Telbhitha	Dandaghoda	Total Income	Average Income
Agriculture	333800	641400	98300	80300	291000	359000	1581200	779700	**4164700**	**12285.25**
Vegetable Agriculture	10800	93200	24500	12500	500	9400	29500	41400	**221800**	**654.28**
Non-Timber Products	69500	326700	60350	32000	42100	66000	276600	252100	**1125350**	**3319.62**
Cash Crops	34500	236500	65650	39700	0	34200	3500	58200	**472250**	**1393.07**
Animal Husbandry	51000	53000	5000	25000	0	31600	178250	116500	**460350**	**1357.96**
Agricultural Labour	46100	170900	39400	14500	4200	44300	87800	85600	**492800**	**1453.69**
Daily Wage	71500	77400	29000	38000	13600	64500	1050	68300	**363350**	**1071.83**
Migration	17000	52000	70500	15000	0	34000	154000	138000	**480500**	**1417.40**
Business	0	49000	6100	0	0	0	0	17100	**72200**	**212.98**
Govt. Scheme	129600	156000	36000	20400	64800	136800	201600	199200	**944400**	**2785.84**
Badlao Foundation	39100	76900	27800	32800	0	40400	0	24000	**241000**	**710.91**
Others	19700	32000	1450	0	0	24400	96000	9000	**182550**	**538.50**
Total Income	**822600**	**1965000**	**464050**	**310200**	**416200**	**844600**	**2609500**	**1789100**	**9221250**	**27201.33**
Average Income	**32904.00**	**25192.31**	**18562.00**	**20680.00**	**21905.26**	**35191.67**	**30343.02**	**26702.99**	**27201.33**	-

Source: *Field Data*

It is evident from Table 10.9 that average annual household income of the Sauria Paharia of project area was Rs. 27201 during the project period. There was an increase of more than Rs. 9000 (i.e. 50%) over the earlier income level of Rs. 1800 before starting the project. Thus, the increase in annual income was five times that of planned increase of 10% as a result of project activities.

Agriculture continued to be the main source of income with more than half of annual income coming from cultivation of crops (including cash crops) and vegetable cultivation. The income from agricultural sector increased by 20% as compared to pre-project period. Similarly, there was increase of 10% in the income from NTFP during the same period. The increase in earnings from wages was most significant; it rose by more than double from Rs. 1500 (before the project year) to Rs. 3941 at the end of the project.

In addition, 16% of annual income in the project period came from government schemes (Rights and entitlements), business and other sources.However, the share of income from animal husbandry in the project period declined by 9% as compared to pre-project period.

If we look at the village wise distribution of annual income (Table 10.9), Senakatar has the highest average annual income of Rs. 35192 largely coming from agricultural sector (42%) and government entitlements and rights (16%). The lowest average annual income was in Dumarkajri with Rs. 18562. The main sources of income in Dumarkajri are wage labour (30%), agriculture (21%) and government schemes (8%) respectively.

Economic Status.

Table 10.10: Village-wise Classification of Households by Categories of Annual Income (in Rs.)

Village	Income Group					Total
	<10,000	10,000-15,000	15,000-20,000	20,000-25,000	>25,000	
Champa	0 0.00	0 0.00	0 0.00	3 12.00	**22** 88.00	**25** 100
Tamligodha	1 1.28	10 12.82	14 17.95	15 19.23	**38** 48.72	**78** 100.00
Dumarkajari	2 8.00	8 32.00	6 24.00	6 24.00	**3** 12.00	**25** 100
Liladhoni	0 0.00	3 20.00	4 26.67	5 33.33	**3** 20.00	**15** 100.00
Goga	4 21.05	5 26.32	3 15.79	2 10.53	**5** 26.32	**19** 100.00
Senakatan	0 0.00	0 0.00	0 0.00	0 0.00	**24** 100.00	**24** 100
Telbhitha	8 9.30	12 13.95	16 18.60	9 10.47	**41** 47.67	**86** 100.00
Dandaghoda	4 5.97	11 16.42	13 19.40	5 7.46	**34** 50.75	**67** 100.00
Total	19 5.60	49 14.45	56 16.52	45 13.28	170 50.15	339 100.00

Source: *Field Data*

Table 10.10 gives village wise classification of houses in terms of categories of annual income. The table shows that half of the total households of project area belong to high income group of Rs. 25000 and above. Another 30% belong to Rs. 15000 to Rs. 25000 income category. 15% belong to Rs. 10000 – 15000 income group. Only 5.60% are in the lowest income group of below Rs. 10000 respectively. There are inter-village variations in the income level of households. In Champa and Senakatar almost all the households are in the category of high income group of Rs. 25000 and above. In Telbitta and Dandagora half of the households have income level of more than Rs. 25000.

Table 10.11

Distribution of Households by Different Categories of Income Groups.

Income Groups (In Rupees)	Baseline Survey (2014)		Impact Survey (2018)	
	No. of HHs	%age	No. of HHs	%age
< 10000	21	6.40	19	5.60
10000 – 15000	99	30.18	49	10.45
15000 – 20000	114	34.75	56	16.52
20000 – 25000	60	18.30	45	13.28
>25000	34	10.37	170	50.15
	328	100.00	339	100.00

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

The Table 10.11 shows that the economic status of households has improved during the project period in comparison to the period before the project. During baseline survey (2014) only 10.37% of households had an income level of Rs. 25000 and above. The Impact survey (2018) revealed that the percentage of households in the high income group (>25000) has moved up to 50%. It appears that various activities carried out during the project period for improving income of the households, particularly in the areas of natural resource management, sustainable agriculture such as soil and water conservation and NTFP have commulatively given sudden spurt in raising the income level of majority of the households across the project area.

10.10 Status of Skilled Persons in the Household

Table 10.12: Sex-wise Distribution of Skilled Persons in the Household Population

Sex	Computer	Smartphone	Tailor	Masson	Bamboo Craft	Carpenter	Unskilled	Total
Male	10	8	2	21	75	15	208	339
Female	-	-	-	-	1	0	338	339
Both Male & Female	10	8	2	21	76	15	207	339
Earning People	5	-	2	8	32	12	280	339

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

Table 10.12 above shows that in a population of 1541 persons in 339 households there were 132 (9%) persons who were trained in non – agricultural occupational skills such as Bamboo craft (76), Mason (21), Carpenter (15), Computer (10), mobiles (8), and tailors (2) respectively. Out of these 132 skilled persons 59 (45%) were earning their living through these skilled occupations. All the skilled persons were men only. They were able to supplement their family income through these non – agricultural income generation activities.

10.11 Status of Land holding

Total area of land owned by 339 households is 6256.5 acres of which 32% is plain land and 68% sloped land. Average area of land owned by each family is 18.5 acres of which 5.9 acres is plain and 12.6 acres is sloped land respectively. Average land per family is highest (40.2 acres) in Liladhoni and lowest (9.6 acres) in Telbitta village respectively.

Table 10.13: Village-wise Current Status of Land Holding (in Acres)

Village	Plain Land	Sloped Land	Total Land	Average per HH
Champa	72	536	608	**24.3**
Tamligodha	495	838	1333	**17.1**
Dumarkajari	436	504	940	**37.6**
Liladhoni	258	345	603	**40.2**
Goga	30	374	404	**21.3**
Senakatan	71	425	496	**20.7**
Telbhitha	273.5	550	823.5	**9.6**
Dandaghoda	363	686	1049	**15.7**
Total Land	**1998.5**	**4258**	**6256.5**	**18.5**
Average per HH	**5.9**	**12.6**	**18.5**	**-**

Source: *Field Data*

Majority of the Sauria Paharia (64.90%) belong to the category of big farmers having more than10 acres of land, about 14% are middle farmers having land between 5 – 10 acres, and less than 10% are small farmers with land holding of 2.5 – 5 acres. Around 12% are marginal farmers having holding of less than 2.5 acres. Though the percentage of Sauria Paharia owning big land holdings is quite high, yet large part of their land is upland and forest land and is not fit for cultivation (Table 10.14).

Table 10.14: Village-wise Distribution of Households by Size of Land Holding (in Acres)

Village	Land Holding Size				Total
	< 2.5 Acres	2.5 – 5.0 Acres	5.0 – 10.0 Acres	> =10 Acres	
Champa	-	1 4.00	3 12.00	21 84.00	**25** 100.00
Tamligodha	0 0.00	0 0.00	14 17.95	64 82.05	**78** 100.00
Dumarkajari	0 0.00	0 0.00	1 4.00	24 96.00	**25** 100.00
Liladhoni	0 0.00	0 0.00	0 0.00	15 100.00	**15** 100.00
Goga	1 5.26	1 5.26	3 15.79	14 73.68	**19** 100.00
Senakatan	0 0.00	0 0.00	5 20.83	19 79.17	**24** 100.00
Telbhitha	32 37.21	17 19.77	9 10.47	28 32.56	**86** 100.00
Dandaghoda	7 10.45	14 20.90	11 16.42	35 52.24	**67** 100.00
Total	**40** **11.80**	**33** **9.73**	**46** **13.57**	**220** **64.90**	**339** **100.00**

Source: *Field Data*

During the project period efforts were made to treat the land and create irrigation facilities to make it feasible to bring more and more land under cultivation.

10.12 Status of Livestock (Cattle Wealth)

Rearing of livestock like goats, pigs, cows and poultry is generally taken up as a subsidiary occupation by Sauria Paharia. It provides them sustainable employment during lean season.

The number and type of livestock domesticated by them is comparatively less. Baseline survey reported that they possessed only few kinds of domestic animals like cow (419), bullock (76), buffalo (7), goat (200), pig (149) and horse (3) respectively. Some of the families also maintained poultry (137).

Animal husbandry support was given to 100 Sauria Paharia families to rear goats during the project period. However, the survival rate of goats was very poor due to bad climatic situation.

It is clear from the table below that in general, the number of different kinds live stock has multiplied manifolds in the project period of 4 years, making it viable alternative source of income for the villagers.

Table 10.15 – Status of Live Stock

S.no.	Type of live Stock	Year (2018) No.	Year (2013) No.	Increase (2013 – 2018)
1	Poultry Birds	829	137	692
2	Goat	563	200	363
3	Pig	476	149	327
4	Cow	605	495	110
5	Buffalos	14	7	7
6	Horse	19	3	16

Source: *Field Data*

Thus, it reveals that as though not much effort was made to promote cattle rearing through the project, however, various other activities and environment created through the project during last four years have made cattle rearing a useful alternative livelihood activity for the Sauria Paharia.

10.13 Villager's Perception on Status of Household Assets

Generally valuable material assets are created by the people to make life smooth and comfortable. But the Sauria Paharia have very few assets. Brass and steel utensils are available in almost all the households. For personal mode of transport some of them possess bikes and cycles. Some of the families also possess Television, Radio and mobile phone as well.

Over the last four years of project intervention the situation has not changes much regarding the possession of family assets. The number of persons with mobile

sets has multiplied many folds. Each of the 339 families have modern equipments and renewable energy devices (provided through the project) such as smokeless chullah fitted with water heating tank and solar lamps which have improved cooking and lighting facilities in their houses.

Table 10.16: Perception of Respondents on Status of HH Assets

Status on HH Assets During the Project Period in Comparison with the Status Before the Intervention of the Project							
Assets	**Decrease**		**Increase**		**No Effect**		**Total**
	Quality	Quantity	Quality	Quantity	Quality	Quantity	
Cooking utensils	15 4.42	15 4.42	220 64.90	224 66.08	104 30.68	100 29.50	339 100.00
Furniture	16 4.72	15 4.42	133 39.23	134 39.53	190 56.05	190 56.05	339 100.00
Electric Goods	12 3.54	10 2.95	136 40.12	136 40.12	191 56.34	193 56.93	339 100.00
Agricultural Tools	12 3.54	10 2.95	64 18.88	64 18.88	263 77.58	265 78.17	339 100.00
Cosmetics	12 3.54	10 2.95	181 53.39	181 53.39	146 43.07	148 43.66	339 100.00
Vehicle	12 3.54	10 2.95	140 41.30	140 41.30	187 55.16	189 55.75	339 100.00
Ornaments	**13** **3.83**	**13** **3.83**	**124** **36.58**	**124** **36.58**	**202** **59.59**	**202** **59.59**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

According to table 10.16 above, majority of the respondents have perceived increase in the quantity as well as quality of cooking utensils in the family. Similarly, possession of items of personal use/decoration such as soap, oil, cream etc. have also increased over the last four years. However, majority of the respondents did not see any significant change in the quantity /quality of items like furniture, electrical goods, agricultural instruments, vehicles and ornaments. Lack of electricity and roads seemed to have discouraged the villagers from adding more electrical items and vehicles to the existing family assets.

10.14 Villager's Perception of the Impact on Status of Agriculture

Majority (62%) of the Sauria Paharia villagers perceived that agriculture, the main stay of the population, has improved during the project period as compared to earlier times. However, one third of the respondents particularly in Goga and Telbitta did not perceive any change in the status of agriculture during project period (Table 10.17).

Table 10.17: Village-wise Perception of Respondents on Status of Agriculture

Status on Agriculture in Households During the Project Period in Comparison with the Status Before the Intervention of the Project				
Village	**Decrease**	**Increase**	**No Effect**	**Total**
Champa	-	25 100.00	-	25 100.00
Tamligodha	-	67 85.90	11 14.10	78 100.00
Dumarkajari	1 4.00	13 52.00	11 44.00	25 100.00
Liladhoni	1 6.67	9 60.00	5 33.33	15 100.00
Goga	-	5 26.32	14 73.68	19 100.00
Senakatan	-	22 91.67	2 8.33	24 100.00
Telbhitha	5 5.81	33 38.37	48 55.81	86 100.00
Dandaghoda	12 17.91	36 53.73	19 28.36	67 100.00
Total	**19** 5.60	**210** 61.95	**110** 32.45	**339** 100.00

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

The majority response has thus supported the efforts made during the project period to increase the production and productivity of crops by providing improved seeds, undertaking soil and water conservation activities and imparting orientation and training to farmers on sustainable agricultural practices etc.

10.15 Villager's Perception on Status of Kitchen Garden

It was found that 53% of the villagers believed that vegetable cultivation and kitchen gardening has increased in the project area during the implementation of the project. However, their perception about status of kitchen garden varies from village to village (Table 10.18).

Table 10.18: Village-wise Perception of Respondents on Status of Kitchen Garden

Status on Kitchen Gardening in Households During the Project Period in Comparison with the Status Before the Intervention of the Project				
Village	**Decrease**	**Increase**	**No Effect**	**Total**
Champa	-	25 100.00	-	25 100.00
Tamligodha	8 10.26	34 43.59	36 46.15	78 100.00
Dumarkajari	-	7 28.00	18 72.00	25 100.00
Liladhoni	1 6.67	5 33.33	9 60.00	15 100.00
Goga	-	4 21.05	15 78.95	19 100.00
Senakatan	-	22	2	24

		91.67	8.33	100.00
Telbhitha	-	41 47.67	45 52.33	86 100.00
Dandaghoda	3 4.48	42 62.69	22 32.84	67 100.00
Total	**12** **3.54**	**180** **53.10**	**147** **43.36**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

While majority of the villagers from Champa, Senakater and Dandagora perceived improvement in the practice of kitchen garden, those from other five villages did not view any progress in this regard.

It was observed during baseline survey that vegetable growing was very rare among the Sauria Paharia. Wherever vegetables were grown near the source of water, these were used for consumption purpose only. People in Goga, Dandagora and Telbitta did not grow vegetables at all.

During the project, efforts were made for promotion of vegetable production among all the households of the project area. Saplings of various types of vegetables like Lady's finger, Brinjal, Tomato, Chilly, Cauliflower, and Cabbage were provided to the families in all the villagers. Roof Top Rain Water Harvesting Structures created in different villages and waste water from kitchen provided water for irrigating the kitchen gardens.

This effort has brought a significant increase in vegetable production from consumption to commercial purpose. During baseline survey only 6.29 acres of land area in 5 villages was found to be under vegetable production and approximate vegetable production in that year was 1120kg.

During the project period both, the area under vegetables and production per acres, has multiplied manifold. All the villages grow vegetables with more and more families opting for vegetable growing. Rising trend of vegetable consumption in the family has certainly contributed towards nutritious diet among Sauria Paharia.

10.16 Status of Fruit Trees

The ecosystem in Sunderpahari area is suited to growth of such fruit trees which survive under swear climatic conditions and hilly geographic location. Therefore, fruit trees like Mango, Jack fruit, Palm, Date and Sahjan are found in large number in this area. Each family possessed variety of fruit trees and made use of the fruits as food (jackfruit) and nutrition in their daily life.

The table 10.19 below gives the distribution of type of fruit trees and the number of families possessing the trees.

Table 10.19: Status of Fruit Trees among the Beneficiaries

Sno.	Name of Fruit Tree	No. of H.H. Possessing Fruit Trees	No. of Fruit Trees
1	Mango	186	611
2	Jack Fruit	195	347
3	Guava	35	44
4	Lemon	36	45
5	Palm	174	613
6	Date	229	2992
7	Sahjan	188	399
8	Papaya	97	209

***Source**: Field Data*

While most of the varieties of fruit trees grow naturally, lemon, Guava and Papaya are planted by the people as per their choice. In addition to consumption, the fruit production has helped to supplement their family income as well as improve food security.

10.17 Villager's Perception on Status of Afforestation

Depletion of forest and water resources caused by wood cutting and lack of adequate measures to check and control the runoff water has aggravated the degradation process abruptly in Sunderpahari area along with other parts of Godda district.

An effort was made during the project to bring 50 acres of hilly slope shifting cultivation area and 30 acres of area in the vicinity of water harvesting structures like weirs, spring wells and ponds under plantation of fruit and timber trees on village land in the project area.

However, the progress of plantation activity was very slow due to problem of procurement and transportation of plants on time and scarcity of water for protective irrigation. Likewise survival rate of plants was also very poor. Therefore, under an alternative strategy 50 acres of natural regeneration of forests by protection system through bush cutting, cattle proof trenching and watch and word system was taken up and continued in the project villages.

Table 10.20: Village-wise Perception of Respondent's on Status of Afforestation

Village	Decrease		Increase		No Effect		Total
	Tree Cutting	Plantation	Tree Cutting	Plantation	Tree Cutting	Plantation	
Champa	7 28.00	0 0.00	0 0.00	25 100.00	18 72.00	0 0.00	25 100.00
Tamligodha	3 3.85	10 12.82	32 41.03	31 39.74	43 55.13	37 47.44	78 100.00
Dumarkajari	1 4.00	0 0.00	6 24.00	16 64.00	18 72.00	9 36.00	25 100.00
Liladhoni	0 0.00	0 0.00	2 13.33	10 66.67	13 86.67	5 33.33	15 100.00
Goga	0 0.00	0 0.00	1 5.26	1 5.26	18 94.74	18 94.74	19 100.00
Senakatan	0 0.00	0 0.00	0 0.00	23 95.83	24 100.00	1 4.17	24 100.00

Telbhitha	0 0.00	0 0.00	16 18.60	22 25.58	70 81.40	64 74.42	86 100.00
Dandaghoda	7 10.45	2 2.99	13 19.40	33 49.25	47 70.15	32 47.76	67 100.00
Total	**18** **5.31**	**12** **3.54**	**70** **20.65**	**161** **47.49**	**251** **74.04**	**166** **48.97**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

It is clear from Table 10.20 that majority of the villagers (74%) considered that cutting of forests has continued to be similar in the project period as compared to earlier times. Similarly, half of the respondents thought that new trees were being planted; however, the other half did not see much progress in afforestation activities.

10.18 Villager's Perception of Impact on Influence of Money Lenders

In a survey conducted before the project intervention, it was found that large number of Sauria Paharia families were indebted to money lenders (Mahajan) who extend loan on very high rate of interest. In the absence of alternative financial institutions like banks in hill top Sauria Paharia villages, they were forced to approach the money lenders for agricultural and consumption loans. Frequently, their crop was taken away by the money lender from the field itself causing them great economic hardship.

With the coming up of SHGs in all the project villages, the Sauria Paharia look for loans from SHGs which are interest free. Coming up of banking services in the area has also reduced villager's dependence on local money lenders and minimized their exploitation by the latter.

The farmers have also got benefitted from free seed loans for cropping from the project during 2014 to 2017. They were also encouraged to save crop seeds for the next season. They are no more scared of money lenders who used to take away farmer's crops from field in lieu of the loan (plus interest money) taken at the time of sowing the crops.

Table 10.21: Village-wise Perception of Respondent's Regarding Dependence on Moneylenders

Village	Decrease	Increase	No Effect	Total
Champa	22 88.00	1 4.00	2 8.00	25 100.00
Tamligodha	33 42.31	12 15.38	33 42.31	78 100.00
Dumarkajari	8 32.00	1 4.00	16 64.00	25 100.00
Liladhoni	9 60.00	1 6.67	5 33.33	15 100.00
Goga	2 10.53	11 57.89	6 31.58	19 100.00
Senakatan	23 95.83	0 0.00	1 4.17	24 100.00
Telbhitha	29 33.72	31 36.05	26 30.23	86 100.00

Dandaghoda	40 59.70	6 8.96	21 31.34	67 100.00
Total	**166** **48.97**	**63** **18.58**	**110** **32.45**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

It is evident from the table 10.21 above that about half of the respondents perceived decline in the influence of money lenders. One third considered that money lenders continued to wield the same influence as before in the project area. Thus, it may be inferred that money lender has a deep rooted position among the Sauria Paharia, but their influence was waning with the time with the intervention of other sources of financing in the project area.

10.19 Villager's Perception of Impact on Social Evils among Sauria Paharia

The prevalence of socio – cultural practices of healing with magic (Jadu – Tona), child marriage, dowry and alcoholism among Sauria Paharia have adversely affected their survival and continue to be main constraints in their socio – economic development. The project has taken care to create awareness about these issues through village meetings and awareness programmes among the Sauria Paharia from time to time.

Practice of Child Marriage

Child and early marriage has continued to be a social evil among the Sauria Paharia and other vulnerable communities in Jharkhand. This practice has deprived the girl child of her childhood play and education and drowned her in the sea of miseries. Further her situation has got worse with early pregnancies and motherhood affecting her physical and mental well being.

Table 10.22: Village-wise Perception of Respondent's on Practice of Child Marriage

Village	Decrease	Increase	No Effect	Total
Champa	1 4.00	1 4.00	23 92.00	25 100.00
Tamligodha	77 98.72	0 0.00	1 1.28	78 100.00
Dumarkajari	22 88.00	0 0.00	3 12.00	25 100.00
Liladhoni	14 93.33	0 0.00	1 6.67	15 100.00
Goga	0 0.00	0 0.00	19 100.00	19 100.00
Senakatan	0 0.00	0 0.00	24 100.00	24 100.00
Telbhitha	28 32.56	0 0.00	58 67.44	86 100.00
Dandaghoda	52 77.61	2 2.99	13 19.40	67 100.00
Total	**194** **57.23**	**3** **0.88**	**142** **41.89**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Table 10.22 reveals that 57% of the respondents believed that the practice of child marriage has decreased during the project period as compared to pre – project phase. Still large number of them (40%) opined that this practice has continued as before without any change.

Practice of Dowry

Irrespective of the Anti-dowry Act and the adverse impact of dowry, this social problem has continued unabated in the society at large and percolated among the simple and primitive tribes like Sauria Paharia.

Table 10.23: Village-wise Perception of Respondent's on Practice of Dowry System

Village	Decrease	Increase	No Effect	Total
Champa	0 0.00	24 96.00	1 4.00	25 100.00
Tamligodha	4 5.13	18 23.08	56 71.79	78 100.00
Dumarkajari	3 12.00	4 16.00	18 72.00	25 100.00
Liladhoni	2 13.33	4 26.67	9 60.00	15 100.00
Goga	0 0.00	0 0.00	19 100.00	19 100.00
Senakatan	0 0.00	24 100.00	0 0.00	24 100.00
Telbhitha	2 2.33	0 0.00	84 97.67	86 100.00
Dandaghoda	3 4.48	11 16.42	53 79.10	67 100.00
Total	**14** **4.13**	**85** **25.07**	**240** **70.80**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Table 10.23 shows that majority of the villagers (71%) did not perceive ang change in the practice of dowry. Moreover, 25% thought that this evil practice was spreading more and more among the Sauria Paharia families every day.

Healing with Magic (Jadu – Tona)

The Sauria Paharia has traditional belief in magical practices for cure of any ailment as a first preference. Even after improvement in access to government medical and health services in the area, almost all (92%) the villager's perceived that dependence on magical healing of sickness has continued on the same pace as before the project period. This perception is a cause for major concern and there is an urgent need to create awareness and demand for modern health services and ensure that these services and ensure that these services are accessible to them as and when required.

Table 10.24: Village-wise Perception of Respondent's on Healing with Magic (Jadu-Tona)

Village	Decrease	Increase	No Effect	Total
Champa	0 0.00	1 4.00	24 96.00	25 100.00
Tamligodha	9 11.54	1 1.28	68 87.18	78 100.00
Dumarkajari	4 16.00	0 0.00	21 84.00	25 100.00
Liladhoni	4 26.67	1 6.67	10 66.67	15 100.00
Goga	3 15.79	0 0.00	16 84.21	19 100.00
Senakatan	0 0.00	0 0.00	24 100.00	24 100.00
Telbhitha	1 1.16	1 1.16	84 97.67	86 100.00
Dandaghoda	4 5.97	2 2.99	61 91.04	67 100.00
Total	**25** **7.37**	**6** **1.77**	**308** **90.86**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Alcoholism

The worst habit of taking liquor and other intoxicants is wide spread among Sauria Paharia and other neighboring tribes. It is a common practice among the villagers, particularly men to drink alcohol on any occasion. The evils of drinking habit are well know as it destroys the family life of the person and leads to ill health, indebtedness, hunger and poverty.

Table 10.25: Village-wise Perception of Respondent's on Habits of Alcoholism

Village	Decrease	Increase	No Effect	Total
Champa	-	-	25 100.00	25 100.00
Tamligodha	51 65.38	9 11.54	18 23.08	78 100.00
Dumarkajari	16 64.00	-	9 36.00	25 100.00
Liladhoni	13 86.67	-	2 13.33	15 100.00
Goga	-	-	19 100.00	19 100.00
Senakatan	-	-	24 100.00	24 100.00
Telbhitha	3 3.49	1 1.16	82 95.35	86 100.00
Dandaghoda	21 31.34	5 7.46	41 61.19	67 100.00
Total	**104** **30.68**	**15** **4.42**	**220** **64.90**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

It can be inferred from the table 10.25 above that two thirds of the respondents did not find any change in the habit of alcoholism in the project period as compared to period before the project. However, 30% believed that this practice has come down during the last four years as compared to time before the beginning of the project.

10.20 Villager's Perception of Impact on Women's Role in Decision making in the family

During the project implementation, various activities were carried out to organize and empower the Sauria Paharia women so as to play an important role in their own development as well as progress of the community. Participation in SHGs has helped them to be economically self – reliant, develop leadership qualities and capacity for decision making.

Table 10.26: Village-wise Perception of Respondent's on Women Participation in Decision making in the Family.

Village	Decrease	Increase	No Effect	Total
Champa	0 0.00	23 92.00	2 8.00	25 100.00
Tamligodha	0 0.00	76 97.44	2 2.56	78 100.00
Dumarkajari	0 0.00	20 80.00	5 20.00	25 100.00
Liladhoni	0 0.00	11 73.33	4 26.67	15 100.00
Goga	0 0.00	15 78.95	4 21.05	19 100.00
Senakatan	0 0.00	24 100.00	0 0.00	24 100.00
Telbhitha	0 0.00	81 94.19	5 5.81	86 100.00
Dandaghoda	2 2.99	63 94.03	2 2.99	67 100.00
Total	**2** **0.59**	**313** **92.33**	**24** **7.08**	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

It is clear from the table 10.26 above that almost all the respondents considered that there is a significant improvement in the extent of participation of women in decision making in the family. The force of respondent's perception is visible in the efforts made for women's empowerment and their active participation in implementation and management of various activities under the project.

10.21 Type of Social Security (Rights and Entitlements) Availed by Sauria Paharia

The detailed efforts and achievements under convergence with government social welfare schemes and programmes have already been discussed in one of the earlier chapters. A brief description of the same is presented here to highlight the benefits accruing to different sections of the Sauria Paharia population from governmental schemes for their welfare and development during the project period.

One of the main concerns of the project implementation was to improve access of the Sauria Paharia to their rights and entitlements so as to enhance their living standard.

As a result of these efforts, majority of the project population has benefitted from various types of social welfare schemes. The villagers have taken advantage of as many as 18 different schemes under health, education, pension, housing, MNREGA, PMJDY and job card, Adhaar card, BPL and PDS etc.

Prior to the project period, the villagers were benefitted only by 6 schemes such as BPL card, PDS, oldage, widow and disabled pensions and job card. However, during the project period, the number of schemes accessed by the villagers has tripled to 18 schemes.

Table 10.27: Village-wise Distribution of Respondents by Type of Social Security Availed by Them

Type of Social Security Availed from the Government		Village								Total
		Champa	Tamligodha	Dumarkajari	Liladhoni	Goga	Senakatan	Telbhitha	Dandaghoda	
1	Public Distribution System (PDS)	22 88.00	56 71.79	18 72.00	13 86.67	19 100.00	23 95.83	68 79.07	53 79.10	**272** **80.24**
2	Aadhaar Card	25 100.00	78 100.00	25 100.00	15 100.00	18 94.74	24 100.00	85 98.84	65 97.01	**335** **98.82**
3	Job Card	20 80.00	62 79.49	20 80.00	14 93.33	18 94.74	17 70.83	54 62.79	43 64.18	**248** **73.16**
4	Voter Card	18 72.00	75 96.15	20 80.00	14 93.33	9 47.37	11 45.83	51 59.30	42 62.69	**240** **70.80**
5	Kishan Credit Card	11 44.00	20 25.64	3 12.00	4 26.67	6 31.58	16 66.67	14 16.28	12 17.91	**86** **25.37**
6	Jharkhand Adim Janjati Pension Yojana (JAJPY)	16 64.00	12 15.38	1 4.00	3 20.00	9 47.37	12 50.00	25 29.07	19 28.36	**97** **28.61**
7	Widow Pension	4 16.00	3 3.85	1 4.00	0 0.00	1 5.26	5 20.83	2 2.33	4 5.97	**20** **5.90**
8	Challenged Pension	0 0.00	2 2.56	0 0.00	0 0.00	0 0.00	0 0.00	6 6.98	2 2.99	**10** **2.95**
9	Old Age Pension	3 12.00	1 1.28	0 0.00	1 6.67	2 10.53	3 12.50	2 2.33	6 8.96	**18** **5.31**
10	MANREGA	15 60.00	37 47.44	14 56.00	11 73.33	0 0.00	15 62.50	0 0.00	15 22.39	**107** **31.56**
11	Janani Suraksha Yojna (JSY)	3 12.00	0 0.00	0 0.00	1 6.67	0 0.00	3 12.50	3 3.49	8 11.94	**18** **5.31**
12	Pradhan Mantri Jan Dhan Yojana (PMJDY)	0 0.00	8 10.26	0 0.00	0 0.00	5 26.32	0 0.00	58 67.44	28 41.79	**99** **29.20**
13	Pradhan Mantri Awas Yojana (PMAY)	0 0.00	13 16.67	7 28.00	4 26.67	5 26.32	1 4.17	38 44.19	14 20.90	**82** **24.19**
14	ICDS	18 72.00	18 23.08	0 0.00	1 6.67	0 0.00	13 54.17	3 3.49	13 19.40	**66** **19.47**
15	Primary School	24 96.00	45 57.69	22 88.00	15 100.00	2 10.53	24 100.00	1 1.16	39 58.21	**172** **50.74**
16	Secondary School	1 4.00	2 2.56	1 4.00	0 0.00	0 0.00	0 0.00	3 3.49	2 2.99	**9** **2.65**
17	Higher Secondary School	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 1.16	0 0.00	**1** **0.29**
18	Hospital	0 0.00	35 44.87	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	6 8.96	**41** **12.09**
19	Mukhya Mantri Adim Janjati Vikash Yojana	0 0.00	1 1.28	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	**1** **0.29**
Total		25 100.00	78 100.00	25 100.00	15 100.00	19 100.00	24 100.00	86 100.00	67 100.00	**339** **100.00**

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

Table 10.27 above has shown that one third of these schemes have benefitted majority of the Sauria Paharia. These schemes are PDS (80%), Adhaar card (99%), Job card (73%), and Voter card (70%), Primary school (50%), MNREGA (32%), PMJDY (30%) and PMAY (25%) respectively.

As compared to pre – project period the number of households availing Ration Card for PDS has slightly declined from 287 to 272 households. The number of Job Card holders has more than doubled from 110 to 248 in the same period.

The number of widow/widowers was 58 in the project area but only one third of them (20) were receiving widow pension now as against 30 during baseline survey. Similarly there were 53 old persons in the population, but only one third (18) were getting old age pension as against 23 during baseline survey. Only 10 out of 14 physically challenged persons were availing the pension. Among the 22 pregnant women 18 were enjoying the benefit of Janani Surksha Yojna (JSY).

The percentage of households benefitting from various schemes varied across villages. For instance there were no beneficiaries from Goga and Liladhoni under MNREGA. PMJDY was available only in Telbitta. However, PDS, Adhaar Card, Voter Card and Job Card were available to most of households in all the villages. Mukhiya Mantri Adim Janjati Vikas Yojna was available only in Tamligora village. Except Goga and Telbitta, all other villages have access to primary schools. Thus, the benefits of government services were wide spread in the project area, but these benefits were not equitably shared by all the Sauria Paharia beneficiaries.

10.22 Villager's Perception of Type of Facilities Availed from the Project

Table 10.28: Village-wise Perception of Respondents Regarding Facilities Availed from the Project

Type of Facilities Availed from the Project		Village								Total
		Champa	Tamligodha	Dumarkajari	Liladhoni	Goga	Senakatan	Telbhitha	Dandaghoda	
1	Land Levelling Work	23 92.00	11 14.10	7 28.00	13 86.67	21 110.53	15 62.50	80 93.02	42 62.69	212 **62.54**
2	Continuous Contour Trench (CCT)	12 48.00	3 3.85	1 4.00	3 20.00	19 100.00	11 45.83	78 90.70	38 56.72	165 **48.67**
3	Gravity Flow Water Irrigation	0 0.00	0 0.00	1 4.00	0 0.00	19 100.00	0 0.00	83 96.51	18 26.87	121 **35.69**
4	WRT/Pond	0 0.00	3 3.85	3 12.00	3 20.00	18 94.74	0 0.00	54 62.79	11 16.42	92 **27.14**
5	Jalkund	0 0.00	4 5.13	1 4.00	2 13.33	0 0.00	0 0.00	3 3.49	1 1.49	11 **3.24**
6	Check Dam	0 0.00	0 0.00	0 0.00	1 6.67	0 0.00	0 0.00	26 30.23	11 16.42	38 **11.21**
7	Loose Bolder Structure (LBS)	1 4.00	3 3.85	1 4.00	0 0.00	1 5.26	0 0.00	1 1.16	5 7.46	12 **3.54**
8	Income Generating Activities	3 12.00	12 15.38	5 20.00	2 13.33	1 5.26	1 4.17	43 50.00	26 38.81	93 **27.43**
9	Support for Sustainable Agriculture	20 80.00	28 35.90	12 48.00	3 20.00	16 84.21	23 95.83	83 96.51	44 65.67	229 **67.55**
10	Support for Kitchen Garden	23 92.00	37 47.44	18 72.00	8 53.33	18 94.74	24 100.00	80 93.02	51 76.12	259 **76.40**
11	Renovation of Drinking Water Well	24 96.00	74 94.87	24 96.00	15 100.00	15 78.95	24 100.00	30 34.88	59 88.06	265 **78.17**
12	Roof-top Rainwater Harvesting	3 12.00	21 26.92	16 64.00	7 46.67	6 31.58	4 16.67	22 25.58	24 35.82	103 **30.38**
13	Smokeless Chullah	20 80.00	56 71.79	23 92.00	13 86.67	13 68.42	20 83.33	37 43.02	43 64.18	225 **66.37**
14	Solar Lamp	22 88.00	67 85.90	23 92.00	15 100.00	18 94.74	23 95.83	72 83.72	55 82.09	295 **87.02**
15	Construction of Community Centre	0 0.00	0 0.00	0 0.00	0 0.00	15 78.95	0 0.00	82 95.35	36 53.73	133 **39.23**
16	Distribution of Veterinary Kits	1 4.00	0 0.00	0 0.00	0 0.00	1 5.26	3 12.50	24 27.91	19 28.36	48 **14.16**
17	Distribution of SHG Kits	6 24.00	67 85.90	21 84.00	15 100.00	8 42.11	9 37.50	61 70.93	47 70.15	234 **69.03**
18	Training	17 68.00	67 85.90	19 76.00	14 93.33	6 31.58	10 41.67	62 72.09	50 74.63	245 **72.27**
19	Facilities Received from SHG	19 76.00	74 94.87	24 96.00	15 100.00	9 47.37	12 50.00	64 74.42	54 80.60	271 **79.94**
20	Facilities Received from Watershed Committee	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 **0.00**
Total		25 100.00	78 100.00	25 100.00	15 100.00	19 100.00	24 100.00	86 100.00	67 100.00	**339** **100.00**

Source: *Field Data*

Note: *Figure in bracket denotes percentage.*

The respondents were asked whether they have availed the facilities provided during the project period. Table 10.28 has revealed overwhelming response in favour of receiving various facilities from the project. However, the percentage of respondents availing these facilities varied across villages as well as between different categories of services availed.

Majority of them have availed facilities in the area of soil and water conservation, sustainable agriculture, kitchen garden and income generation activities. Similarly, most of them were making use of basic facilities like safe drinking water, smokeless chullah and solar light provided through the project. They were able to take advantage of SHGs in taking up various income generation activities and augmenting their family income.

10.23 Perception of senior members of Family about Overall Impact of the Project

Table 10.29: Perception of Senior Male & Female Members of Family Regarding Overall Impact of the Project

Sex	Decrease	Increase	No Effect	**Total**
Male	12 3.54	303 89.38	24 7.08	**339** **100.00**
Female	4 1.18	333 98.23	2 0.59	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

It is clear from the table above that almost all the elderly men and women heads of the Sauria Paharaia families perceived that the project has generated positive overall impact on the people and the environment of the project area.

10.24 Respondent's preference for type of assistance needed to improve their living standard in future

The respondents were asked to give their choice of interventions needed further to improve their living conditions after the project was over. Among the various options, need for conservation of water for drinking, domestic use and irrigation of crops was given the top priority. The second place was given to need for improvement of health services. Demand for educational facilities was put next to health needs.

Table 10.30: Respondent's Preference of Type of Assistance Required for Further Improvement in Their Living Standard

Subject	Preference						Total
	1	2	3	4	5	6	
Education	66 19.47	64 18.88	92 27.14	71 20.94	45 13.27	1 0.29	**339** **100.00**
Health	18 5.31	120 35.40	130 38.35	57 16.81	14 4.13	0 0.00	**339** **100.00**
Water Management	212 62.54	82 24.19	34 10.03	10 2.95	1 0.29	0 0.00	**339** **100.00**
Land and Soil Management	13 3.83	9 2.65	25 7.37	81 23.89	140 41.30	71 20.94	**339** **100.00**
Income Generation Activities	21 6.19	57 16.81	51 15.04	87 25.66	72 21.24	51 15.04	**339** **100.00**
Rights	9 2.65	7 2.06	7 2.06	33 9.73	67 19.76	216 63.72	**339** **100.00**

Source: *Field Data*
Note: *Figure in bracket denotes percentage.*

Land and soil management as well as income generation activity were clubbed at the fourth position. However, demand for rights and entitlements were considered the last but not least preference for improving their living conditions.

It may be inferred that the Sauria Paharia were more keen to go ahead with continuing the efforts for sustainable development of their livelihood opportunities to further upgrade their living standard and quality of life. However, lack of health and educational services has continued to be the bane of Sauria Paharia.

11
Subsistence to Sustainable Development of Livelihood among Sauria Paharia

11.1 Badlao Foundation

11.1.1 Badlao foundation (BF) has been engaged in the mission of participatory development and social transformation of Santhal Pargana region for the last 36 years.

11.1.2 The Organization (BF) has been working among the underprivileged and tribal people in six districts of Santhal Pargana i.e. Jamtara, Dumka, Deoghar, Godda, Pakur and Sahibganj covering one thousand and fifteen villages in 44 Development Blocks. The Organization took up programmes in different areas of action focusing on overall development of the people mainly covering areas like women empowerment, livelihood promotion, and natural resource management, food and nutrition security, water and sanitation, health, education for women and children and khadi gramodyog.

11.1.3 The basic premise of the Organization has been to involve the people in the process of participatory development and social transformation as agents of change as well as recipients of the benefits of the same. The strategy for action has been to constitute and strengthen community based organizations (CBO) to take up planning, implementation and management of development programmes on their own.

11.1.4 The Organization, in continuation of its development efforts, has taken up two sponsored projects in Sunderpahari block of Godda district. These projects were focused on improving the living conditions of the Sauria Paharia as well as strengthening their capacity to access entitlements and privileges meant for them.

11.2 The Project

11.2.1 The current project on sustainable development of livelihood opportunities, executed the B.F., was funded by KKS Germany. The term of the project was for 3 years between 2013–2016 and extended for another year till 2017. The project covered entire population of 339 BPL Sauria Paharia households of targeted 8 villages of Sunderpahari block of Godda district. The villages are Champa, Tamligora, Dumarkajri, Liladhoni, Goga, Senakatar, Telvitta and Dandagora.

11.2.2 **The Objectives**

The project aimed at enabling the Sauria Paharia population to enjoy improved living conditions by engaging in climate resistant livelihood opportunities and improved access to government services.

The intermediate objectives were to increase the income and food security, improve the basic facilities regarding safe drinking water, and renewable energy sources for cooking and light. It will also enable women to take up other income generation activities (through SHGs) for food security. It will also ensure community participation in utilizing and managing the community assets and resources through Water Shed Committees.

11.2.3 **The Strategy**

The project was implement through the instrument of Self Help Structures (SHGs & Watershed Committee), created in the project villages in four years between 2013 to 2017.

11.2.4 **Major Components of the Project**

a). Component I – Sustainable utilization of natural resources, eco friendly agriculture practices and supplementary income generation activities based on animal husbandry and NTFP.

b). Component II – Sustainable and secure source of drinking water and renewable energy saving devices for cooking and lighting.

c). Component III – Promotion of Self Help Structures and linkages with PRIs.

Various types of activities were carried out under each component to achieve the stated targets within a period of three years (extended for one more year). In addition to expecting immediate concrete outputs of different civil work activities, long term benefits of the project were envisaged on the population and ecosystem of the project area.

11.2.5 **Component wise Achievement of Targets**

11.2.5.1 **Component I –** Various types of activities were carried out to achieve the outcomes/results under component I. The achievement of targets and benefits under each category of activity are given as under.

a). Soil and Water Conservation

- Soil and Water conservation activities were carried out on 320 acres of cultivable land of 8 Sauria Paharia villages.

- Soil conservation activities were done in all the cultivable area. Land leveling, Land bunding and CCT were completed in 130 acres of land and brought under cultivation of crops.
- Water harvesting structures were created in selected villages. There were one weir (out of 2), Jalkund – 1, Water RechargeTank – 4, Spring wells – 4 and Gravity Flow Irrigation System – I created in different project villages. 60 acres of land was irrigatedthrough these water harvesting structures and brought under cultivation of crops and vegetables.
- The Gravitation flow system has benefitted around 100 population of Goga by creating drinking water facility at their door step for the first time.
- The project achieved almost all the targets of construction of water harvesting structures and land treatment in the project area.
- Water harvesting and conservation of soil and water by harnessing rain water has helped in some measure, to bring change in the nature and quality of soil and develop minor irrigation system in the project villages. This, in turn has resulted in improvement of agricultural productivity as well as growth of vegetation in these areas.

b). Tree Plantation

Tree plantation, which was planned as one of the major intervention, could not be continued due to problems of procurement and transportation of plants on time and scarity of water for protective irrigation resulting in poor survival rate of saplings. Therefore, alternative strategy was adopted for natural regeneration of forests on 50 acres of land through participatory protection system.

c). Introduction of Sustainable Agricultural Practices

(i). The Sauria Paharia were benefitted through introduction of sustainable agricultural practices with periodic training on a wide range of aspects such as compost making, pest management, seed and grain management, animal husbandry and afforestation between 2014 to 2017. About 300 farmers participated in these training programmes and upgraded their knowledge and skills on various agricultural practices.

(ii). The Sauria Paharia farmers succeeded to improve the yield of traditional crops through the use of improved seed and better management practices introduced through the project. It was reported that 312 farmers cultivated 111 acres of hill slope land with the improved seeds of chick pea, horsegram and vegetables and earned an average surplus income of about Rs. 6300/ acre in the first year of the project.

The seed support has also helped the farmers to increase the cropping area and move towards food security.

(iii). Vegetable cultivation is relatively a new practice in the region. With the development of water harvesting structures along with roof top rain water harvesting system during the project period, vegetable farming has shown the potential to improve the nutrient intake as well as rise in family income of the project population through consumption and sale of surplus vegetables in the market.

d). Income Generation through Animal Husbandry and Non Timber Forest Produce (NTFP)

As many as 72 families in the project villages were given support as well as orientation in starting alternative income generation activities to supplement their family income. Thus, 50 families got support for goatery. 7 for Mahua collection, 9 for petty shops and 6 families for cocoon rearing respectively. Under NTFP, collection and sale of Kendu leaves continues to be an important traditional source of income for the Sauria Paharia families.

Average annual family income from NTFP increased by 10% from Rs. 3000 in 2013 to 3319 in 2017 mainly due to project intervention.

11.2.5.2 **Component II –** Sustainable development of basic facilities like safe drinking water sources, alternative sources of energy for cooking and lighting and roof top rain water harvesting structure was the second important objective of the project for improving living conditions of the Sauria Paharia.

(a). Renovation of Wells

Through the renovation of 10 drinking water wells in 5 villages, the project population was enjoying safe and secure drinking water as well as water for domestic use. Some of the villagers have also started growing vegetables near these wells. Through chlorination of these wells before monsoon, the outbreak of water born diseases during rainy season has been checked to a large extent.

b). Promotion of Smokeless Chullah

In the beginning, the Sauria Paharia were indifferent and reluctant to adopt the new smokeless chullah. However, a few innovative women among them agreed to adopt the new technology. It had demonstration effect and more and more families started using smokeless chullah. Against a target of 300 new chullahs, 293 were installed in as many families of project villages.

The smokeless chullah needed frequent repairs especially after every annual house roof repairs, when the smoke chimney is removed and need re-installation. However, the new chullah has been accepted, but it has not yet replaced the traditional chullah completely.

The users of new chullah claimed that in comparison to the traditional chullah, the use of new one has saved them of smoke. It consumes comparatively less fuel wood. It also provides hot water from its water tank for use by women and children during winter.

c). Promotion of Solar Lamp

Solar lamps were distributed to all the 330 families of the project area. Training /orientation was provided to all the users. In the absence of electrification in this area, the introduction of solar lamp as an alternative source of energy saving device for light has revolutionized the lighting facilities in an environment of total darkness. Almost all the solar lamps were in good use and supplied sufficient light for in-house domestic works at night.

The use of solar lamps has reduced the expenditure on kerosene oil for traditional lamp, provided smokeless and clean lighting solution in homes, safety against poisonous insects and snakes, bright lighting for studies by children and charging of mobile phones through the battery of the solar lamp. Thus, solar lamps have become very popular and brought changes in habits and activities of the people with the availability of bright light at night in their homes.

d) Roof Top Rain Water Harvesting Structures

Roof Top Rain Water Harvesting Structures were installed in 97 out of 100 selected households in the project area. Training was provided to all the users on maintenance and upkeep of these structures. This intervention helped to increase availability of water in the hills by tapping rain water from slanting tiled roofs of individual houses and storing the water in a dug out tank.

The villagers used the roof top rain water for domestic purpose and developed kitchen garden near the house for growing vegetables. About half of the users of this system have developed kitchen gardens around these structures near their homes.

11.2.5.3 **Component III – Promotion of Self Help Structures and Linking them with PRIs**

The Sauria Paharia of each of the 8 project villages were organized through creation of self help structures such as SHG and Watershed Committees and linking them with PRIs.

a). 18 Self Help Groups (SHG) of women were created against target of 8 for taking up micro-credit activities (including income generation) and linked to NABARD and other Nationalized Banks. The members of SHGs were provided training on various aspects such as maintenance of SHG records, build leadership skills, maintenance of finance and market linkages. All the SHGs were provided with a kit including a box, registers, stamp and stamp pad, pen, pencil etc. to help the group to maintain their records.

Through participation in SHGs, the Sauria Paharia women have developed self confidence to pursue suitable micro-finance activities to supplement their family income. Participation in SHG has empowered the women members and helped them in capacity building, in taking up collective action, decision making as well as increase their awareness and access to their privileges and entitlements.

b). Against the target of 8 Watershed Committees 10 such committees were formed in 8 project villages to take charge of management of the watershed structures created by the project.

The numbers of Watershed Committees were oriented and trained from time to time on various aspects of management of these community structures. These training programmes were conducted in collaboration with Krishi Vigyan Kendra (KVK) and agricultural and irrigation departments of the state government.

c). PRI members were involved in the execution of the project and were duly given training on various issues like climate change and its impact on farming.

d). 16 Community Resource Persons (CRP) were selected from 8 villages to serve as resource persons for the Sauria Paharia farmers. These local resource persons went through numerous capacity building exercises which enabled for enabling them to play their role skillfully. They were trained in crop management and practices and recording of crop yield and sale at the household level.

With their training on sustainable agriculture they were helpful in imparting knowledge on various aspects of agriculture such as input management, crop selection and procurement of agro-equipments to the local farmers.

e). A community Centre was constructed at Domdih where group meetings, orientation and training programmes were held from time to time for the project staff, SHG members, Watershed Committee, Community leaders and members, PRI members on various aspects of project execution and management.

f). Under the project, initiative was taken for convergence with government schemes for the primitive tribes. Effort was also made to improve the capacity and access of Sauria Paharia to take their entitlements and privileges effectively.

11.3 Impact of the Project on Living Conditions of the Sauria Paharia

On the basis of an impact survey conducted at the completion of the project, it was found that the project intervention has created an important and positive influence on various demographic and secio-economic characteristics of Sauria Paharia population living in the project area. The intervention has also resulted in sustainable development and utilization of natural resources and sustainable agricultural practices along with subsidiary economic activities like NTFP and other micro-economic pursuits.

The sustainable development of livelihoods has resulted in reduction of food insecurity and rise in the family income of the Sauria Paharia.

The Sauria Paharia were united into community based organizations such as SHG and watershed committees and linked to PRIs and financial institutions like NABARD. This has led them to participate in the implementation and management of the project as well as take advantage of the government services.

11.3.1 **Impact on Socio – demographic Characteristics of Sauria Paharia**

i). The number of households and household population has increased during the project period. The population has increased by 2.1% per annum during this period.

ii). While most of the Sauria Paharia profess traditional tribal religion. 15% of them has adopted Christian faith.

iii). Average family size has increased from 4.33 in 2013 to 4.54 persons in 2018.

iv). Sex Ratio has declined from 1031 females/1000 males to 956 females/1000males in the project period.

v). More than half of project population belonged to children and adolescents between 0-18 years. The rate of increase of population of younger ages (0-18 years) was more than that for the upper ages between 19-60 years during the project period.

vi). Literacy rate among Sauria Paharia was less than 25%. It was below the literacy rate of Sunderpahari block. The male literacy (34.40%) was higher than female literacy of 14.87%. The literacy rate varied from village to village in the project area.

The male literacy rate has increased from 5% to 34.40% and female literacy rate from 3% to 14.87% during the project period.

vii). Majority of the males as well as females have received school education upto middle level i.e. class VIII. The percentage of population achieving different levels of education also varies from village to village in the project area.

11.3.2 **Impact on Livelihood and other Living Conditions**

Planned efforts were made during the project to bring about changes in living conditions and environment of the Sauria Paharia residing in the project area.

In the opinion of the Sauria Paharia respondents the impact of the project was wide spread but not uniform in the project villages. The impact also varied from one aspect to another. Following are the main areas where they have perceived direct/indirect impact of the intervention.

Impact on Clothes and Garments - Almost all the villagers perceived that the quantity and quality of clothes and garments used by them has improved during the project period. It seemed that people have certainly spent a part of their additional income on personal comforts.

Impact on Housing Situation - There was no direct intervention on housing conditions. They villagers continued to live in tiled roofed mud houses with single room. However, the annual house repairs were more frequent than before the project period.

Wealth and Land Holding - Majority of the farmers belong to the category of big farmers with more than 10 acres of land. Average area of land owned by each family is 18.5acres of which 5.9 acres (32%) is plain land and 12.6 acres (68%) is slope land respectively.

Status of Live Stock - Though no significant effort could be made to promote animal husbandry (except goat rearing), Sauria Paharia were traditionally rearing many types of animals like goat, pig, cow, buffalo and horse and maintain poultry respectively. It was found that there was manifold increase in the number of these different types of animals during 2013 – 2018. It appears to be an important alternative source of income for the Sauria Paharia which needs to be promoted.

Status of Household Assets - The quantity and quality of household assets possessed by Sauria Paharia seems to have not changed much during the project period. It appears that they have not shown much interest in accumulating family wealth. However, the respondents perceived that the people were more interested in making investment in buying cooking utensils and items of personal use and decoration.

Impact on Health Situation of the Family Members - Majority of the respondents perceived that health situation of the family members have improved during project period. Though there was no specific intervention for health sector, but various activities taken up for improvement in food and income, safe drinking water, smokeless chullah, solar lamp and awareness programmes seemed to have cumulative impact on health conditions of the population. However, improvement in health situation was not uniform throughout the project area.

Utilization of Health Services by the Villagers - As per response of the villagers mostly they continued to depend upon quacks, herbal medicine and magical healing. However, influence of these services has reduced and that of government hospitals has increased during the project period in comparison to earlier times. Again the utilization of health services from various sources was uneven in the project villages.

Impact on Prevalent Social Evils among Sauria Paharia - Social evils like child and early marriage, dowry, magical healing of illness and alcoholism have been prevalent among Sauria Paharia for a long time. The continuation of such practices has adversely affected their life and thought processes and jeopardized their health and economic situation.

During the project period efforts were made to create awareness about the evils of these beliefs and practices through awareness campaign, street plays and other means of mobilization.

More than half of the respondents considered that incidence of child and early marriage has decreased during project period.

Majority of the villagers thought that the evil practice of dowry has continued unabated among them.

Healing of illness by magic (Jadu-Tona) has continued to be popular among the villagers. Majority of them perceived that magical healing is still the first treatment of a sick person in Sauria Paharia families.

Taking alcohol is wide spread among the Sauria Paharia as among other neighboring tribes. The habit of drinking of liquor is a bane for the poor and deprived tribal people. No festivals or celebrations are fully rejoiced without taking rice-bear or Mahua drink prepared in the village area and easily available in the local weekly markets. The taking of liquor has done a great damage to health and economy of Sauria Paharia. This evil practice has continued to destroy the family life of these people without any sign of improvement in near future.

Impact on Status of Women - The status of Sauria Paharia women has been enhanced by organizing them into Self Help Groups (SHG). Most of the respondents perceived that women's participation in decision making in the family has increased during the project period as compared to pre-project years.

One female member of SHG contested the panchayat elections in 2015 and was elected as a ward member. The women members of SHGs have been empowered through leadership development training, orientation on financial management and market linkages, exposure visit to SHGs in other blocks.

Organizing the women in SHGs and introducing practice of savings was among them a sure step towards sustainability. As a result they have some savings and are also able to access small credit in times of need. They were also linked to banking institutions to get benefit of micro-financing schemes.

They are also able to access government schemes and facilities. In the long run they will be able to become a pressure group and seek their rights and entitlements.

Rights and Entitlements Availed by the Sauria Paharia - Before the launching of the project, the villagers in project area could avail benefit of half a dozen social welfare schemes started by the government for their development. With the constitution and empowerment of women SHGs and convergence efforts with line departments of the government, majorities of the villagers were enjoying the benefits of one and a half dozen schemes and programmes such as PDS, Adhaar Card, Job Card, Pension for old, and Widows, PMJDY, PMAY, MNREGA etc. However, the benefits of these schemes were not distributed uniformly in the project villages.

Thus, the project has achieved to large extent the target of improvement in access to rights and privileges of Sauria Paharia population for raising their living standard.

Benefits Availed from the Project - As a matter of strategy, the Sauria Paharia remained involved in implementation and management of various developmental and organizational activities throughout the project. As a result they were fully aware of the progress of these activities and benefits thereof.

They have claimed, though in varying degree, that, the project activities have benefitted the target population at individual, family and village levels. According to them the project has succeeded in achieving the expected outcomes, with varying success, with regard to sustainable utilization of natural resources, sustainable agriculture and supplementary economic activities, utilization of safe drinking water and renewable energy devices for cooking and lighting and

organization and empowerment of Sauria Paharia through formation and strengthening of SHGs and watershed committees for managing the community based resources as well as accessing government services in a better way.

11.3.3 **Overall Impact of the Project**

Most of the respondents agreed that the project has successfully achieved the planned objective of overall improvement in the living situation of the Sauria Paharia of Sunderpahari block. It was envisaged that they live with dignity and harmony with nature in their traditional habitat. It has been achieved through increase in their income, reduction in migration and improvement in food security.

Impact on Annual Family Income and Economic Status - One of the specific objectives of the project was to improve the economic status and increase current annual family income of Sauria Paharia by 10 percent.

As a result of various activities carried out for livelihood promotion, the average annual family income of Sauria Paharia increased by 50% (against planned increase of 10%) over the earlier income level. The rate of increase in income varied from village to village in the project area.

The economic status of households has also improved during the project period. The percentage of households in higher income category (>Rs. 25000/-) has gone up from 10% to 50% in between 2014 to 2017. The major contributors to improvement in family income and economic status were efforts for soil and water conservation and NTFP respectively.

Impact on Migration - Another objective of the project was to reduce migration among the Sauria Paharia by providing them sustainable livelihood opportunities in the villages. Earlier, large number of men of working age groups of the project area used to seasonally migrate to other places in search of employment.

Due to major interventions for soil and water conservation, sustainable agriculture and other income generation activities including NTFP, massive employment and wage earning opportunities were created in the project area between 2014–2018. As a result, the number of persons migrating to other states during the lean agricultural season has reduced significantly due to availability of employment in their own villages.

Majority of the respondents have also confirmed that rate of migration of people from project villages has declined during the project period as compared to earlier times.

Impact on Food Security

An important objective of the project was to reduce food insecurity among the Sauria Paharia through sustainable utilization of natural resources and sustainable agricultural practices. As a result of these activities, there was increase in the acreage under cultivation, improvement in area under irrigation, support for improved seeds and inputs, training on sustainable agricultural practices, which consequently led to increase in crop production and productivity. The income from agriculture and vegetable farming contributed more than half of the average family income of the farmers. Vegetable growing is a new pursuit for the Sauria Paharia. With the improvement in irrigation facilities and support for vegetable saplings and seeds, vegetable growing has become very popular among the villagers. The consumption of vegetables seemed to have improved their nutrient intake as well as augmented their family income through sale of surplus vegetables in the market.

With the support of improved seeds and other inputs from the project, the dependence of farmers on money lenders for such agricultural loan has reduced to a large extent and saved them of exploitation and becoming victims of food insecurity.

All these efforts have resulted in food security and food sufficiency of Sauria Paharia for an additional 2-3 months at the household level. This fact has been corroborated by the villagers. Majority of them perceived that status of agriculture, vegetable farming and food security and nutrient intake by the Sauria Paharia has improved during the project period as compared to earlier times.

The Sauria Paharia also grow variety of fruit trees. While some of these fruit trees like mango, jackfruit, palm, date palm, and sahjan grow naturally, papaya and lemon are grown by the people of their own choice. Each family possessed one to three fruit plants of different varieties. Each family has at least 10 date palm trees.
In addition to consumption of fruits, their sale also helped them to supplement the family income.

12
Future Challenges and Opportunities for Enhancing Livelihood among Sauria Paharia

The planned intervention for sustainable development of livelihoods among Sauria Paharia was based on identification, analysis and prioritization of development needs of the community and the region. Sunderpahari block of Godda district which is the natural abode of Sauria Paharia, shares the distinct features of underdevelopment in the district such as chronic food insecurity economic stagnation, poverty, degraded natural resources, poor health and education, poor infrastructure, lack of basic amenities like safe drinking water and poor socio-economic status of women.

The baseline survey conducted in the proposed project area prior to execution of the planned intervention also highlighted the similar development issues prevalent in the area. Among the various development needs identified above, the following aspects of development priorities were addressed by taking up relevant activities through planned intervention.

i). Conservation and regeneration of natural resources in sustainable manner.
ii). Safe drinking water and renewable energy sources for lighting and cooking support.
iii).Rain water conservation as an eco-supportive alternative means of water sourcing.
iv). Organizing the women.
v). Income generation for food security.
vi). Community participation in the management and use of community assets and resources.

The achievement of various targets and accomplishments of the planned intervention have been discussed in details in the previous chapters. It was observed that various measures taken up to meet the development priorities of the Sauria Paharia have achieved success in varying degree in solving their problems. However, it is an arduous task to sustain the long term benefits of these efforts in the post-intervention years without consorted efforts of the community, the PRIs and the government and voluntary sectors other stakeholders and all the well wishers concerned with well being of Sauria Paharia.

a). The significant improvement in knowledge and awareness on agriculture and vegetable farming induced through availability of water and taking up of land based interventions needs to be sustained through proper management of watershed structures and frequent orientation of farmers on sustainable agricultural practices.

b). Presence of government officials and ground level workers is limited which results in slow delivery of services in the project area. The experience has shown that community organizations like SHGs which have emerged as strong bodies have successfully availed their rights and privileges by negotiating with line departments of the government. They can be visualized to bargain further with the service providers to improve their living conditions like schools, electricity, roads, forest rights and other entitlements.

c). Further, external factors like acquisition of land by coal mine corporate and the tribal's receiving huge compensation money have disturbed project work in two villages. Such extraneous factors, if unchanged, will pose big challenge to sustain the gains of the project to the Sauria Paharia.

d). The most critical is the process of social mobilization and engagement with the Sauria Paharia. In what so ever activity their involvement has been good, the results have been sustainable as is clear from the local contribution generated for purchase of seeds.

In the context of future challenges and opportunities for overall development of the Sauria Paharia, the villagers identified and ranked the following development priorities to improve their living conditions.

Development Priority	**Ranking**
Water Management	1
Provision of Health Services	2
Education Facilities	3
Promotion of alternative means of livelihood	4
Land and Soil Management	5
Access to Rights and Entitlements	6

Among these six types of issues health and education sectors continue to be unattended from the pre-project times. The project did not take up these two issues because the main focus of the intervention was on promotion of livelihood opportunities through natural resource management and land based activities.

Thus, for any future intervention education and health needs of the community demand top priority and attention by the development planners. In addition, the villagers were more concerned about the sustainability of various measures taken during the project to improve the living conditions of the Sauria Paharia. The areas which require further action are management of water harvesting structures, improvement in income generation activities, land and soil management and access to rights and privileges.

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Annexure – I

List of Tables

Annexure – II

SHARING WORKSHOP ON THE IMPACT STUDY OF THE PROJECT ON SUSTAINABLE DEVELOPMENT OF LIVELIHOODS AMONG SAURIYA PAHARIA OF SUNDARPAHARI BLOCK, DISTRICT GODDA.

A Workshop on impact study of the project on sustainable development of livelihoods among Sauria Paharia of Sunderpahari block of Godda District was organized on 01.03.19 at BITM Kanke. Speaking on the occasion Dr. Manohar Lal, Ex. Professor of A.N. Sinha Institute of Social studies Patna emphasised on the socio-economic impact of the action projects implemented by Badlao Foundation. The study revealed that the project has succeeded in improving the living conditions of Sauria Paharia by raising their income level and food security through various livelihood interventions such as natural resource management, sustainable agricultural practices and supplementary income generation activities related to animal husbandry and Non Timber Forest Produce. The project has also helped in reducing out migration of adults by providing employment in construction of water harvesting structures and land development activities in the project villages. The project also organized Sauriya Paharia to participate in the process for their own development. The speaker stressed that there was an urgent need to sustain the benefits of the project over a longer period of time. For this linkage with government line departments is very essential. Persons attending and participating in the workshop included among others, Sri Mdhukar, Sri Bajrang Singh, Dr. C.S.P. Singh, Dr. D. K. Jha, Dr, M.P. Singh, Smt Bitiya Murmu, Sri Arvind Kumar and NGO representatives from Pratham, and SPWD.

Paper clippings of the Sharing Workshop on the Impact Study

रांची, शनिवार
02.03.2019 | प्रभात खबर

बदलाव फाउंडेशन में कार्यशाला आयोजित

रांची. कांके अरसंडे स्थित बदलाव प्रशिक्षण एवं प्रबंधन संस्थान के कार्यालय में शुक्रवार को कार्यशाला हुई. इसमें सुंदरपहाड़ी प्रखंड के आठ सौरिया पहाड़िया गांवों के लोगों के लिए किये जा रहे प्रयासों पर विचार किया गया. अनुग्रह नारायण समाज संस्थान, पटना के पूर्व अध्यापक डॉ मनोहर लाल ने कहा कि वहां चलायी जा रही परियोजनाओं से पहाड़िया आदिम जनजातियों के जीविकोपार्जन की व्यवस्था सुधरी है. स्वच्छ पेयजल की उपलब्धता से जल जनित बीमारियों में कमी आयी है. सब्जी और साग की खेती हो रही है. इस मौके पर मधुकर, बजरंग सिंह, डॉ सीएसपी सिंह, डॉ एमपी सिंह, अरविंद कुमार, बिटिया मुर्मू आदि मौजूद थे.

Annexure – IV

Comments of Dr. D.K. Srivastwa, IFS and member of Executive Committee of BITM, Ranchi

Sustainable development of Climate Change Resistant Livelihoods among Sauria Paharias of Sundar Pahari Block ,Godda district ,Jharkhand.

Called upon to write a feedback on such a scholarly treatment of subject in the "Impact study" by Learned Dr Manohar lal ji,I could not escape writing a few lines,it became a head spiining task,though. .Tried hurriedly to record some of my understanding on the subject:

A 4 year KKS Germany sponsored project executed by Badlao Foundation spread over 8 villages covering 328 households of Sunderpahari cd block of Godda district was a focussed development intervention in sync with comprehensive mandates of tribal development both in the government policy and outside.

A preproject baseline survey along various development parameters including Natural resources, tribal development in Sauria Paharia community and village must have been very demanding. Water management ,Health services, Education, livelihoods ,soil and land management and access to rights and entitlements have been prioritized as 6 major key sectors which play pivotal role in tribes life ;A very important task accomplished by The BF. .Challange though lies in appropriately addressing these issues with a focus on tribal development.

Author has dealt in depth chapters 1-10 presenting a ground level scenario and fact based detail treatment of the subject.Socio demographic changes are rather disturbing and calls for immediate intervention.

Chapter 11 dealing "survival to sustainable development of livelihood among Sauria paharia is precise ,factual.,and takes one to a post project resultant scenario ,suggesting acute need of development interventions.;this is reflected in 11.3-Impact of the project on living conditions of the Sauria paharia--@.impact on socio-demographic characteristics wherein it says population increase by over 2%. @Impact on livelihoods and other living conditions –clothiongs, housing, status of livestocks, health of family members,@ impact on prevalent social evils ,

@ impact on satus of women @ impact on rights and entitlements

Also fare treatment of overall impact of the project is well highlighted such as increrase in family income, reduced distress migration, impact on food security.

Chapter 12 opens window of new challenges and building a case for URGENT development interventions. It has identified 6 sectors for priority handling-already mentioned ibid. Rightly it refers in the end HEALTH and EDUCATION as basic issues which need to be pursued without break .New projects should certainly be posted on these twin issues. Nothing remains to write after this masterly stroke of pen and brain of the author.

To justify task of writing the feedback, following suggestions are offered which may find worth trying in different projects; –

Developing /strengthening existing system of implementation, both in the govt. and non-govt functionaries. Govt. system and structures need to be complemented with nongovt. structual formations like NGOs/VOs,; besides system at village /panchayat level needs adequate strengthening and confidence building measures need to be pushed in them.

Encourage/Promote such nongovernment organizations/functionaries who attach value to committed work culture and have sound record of performance for rural development.

Value based education should be encouraged in children from grass root level by putting a motivated band of persons ,preferably youth who should be identified and properly graced with India culture and values.

Establish a bridge between policy makers, implememnters, Ngos and villagers ,and also academia so that a fare and frequent 2 way communication flows ;media has a great role in propagating the essentials of programmes/schemes .

Adequate awareness about interventions need to be generated to facilitate proper reception of development doses.

Skill development and regular training for skill upgradation must be practised .A sound Exit strategy to form part of the project.

Handholding is desirable for the success of any programme especially rural development interventions. Period of handholding may be decided as needbased.

Climate change as a context and a factor be not only demystified to beneficiaries but to people at large so that its nuances are understood with clarity and proper mitigative measures evolve from village system itself.

Photo Gallery : The changing Sauria Paharia

Research Team to Sauria Paharia Villages

Land Leveling Work

Continuous Contour Trench (CCT)

Weir (Check Dam)

Spring Well

Water Recharge Tank/Pond

Training to Farmers

Seed Distribution

Crops

Jhoom Cultivation at Telvitta

Barbatti Cultivation by Sukra Paharia at Telvitta - 3

Kitchen Garden

Processing and Storage of Grains

Tree Plantation

Petty Shops

Animal Husbandry

NTFP

Drinking Water Well

Gravity Flow

Smokeless Chullah

Solar Lamp

RTRWH

Self Help Group in Action

Water Shed Committee Meeting

PRI & Village Meetings

Community Centre

Jeevan shaili