ASSESSING COMMUNITY RESILIENCE IN BADIN
DRAFT REPORT
DEVTRIO CONSULTANTS

June 4, 2021

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Acronyms

CHWs	Community Health Workers
DAC	Development Assistance Committee
DDMA	District Disaster Management Authority
DRR	Disaster Risk Reduction
FGD	Focus Group Discussion
KII	Key Informant Interview
NGO	Non-governmental organization
PDMA	Provincial Disaster Management Authority
PWDs	Persons with Disability
UC	Union Council
UDMC	Union Council Disaster Management Committee
USAID	United States Agency for International Development
VDMCs	Village Disaster Management Committee

Oxfam

1. Background

Oxfam has been working in Pakistan since 1973 to ensure that all its people – especially women and girls – are able to exercise their rights and have access to basic services and economic resources.[1] The organization aims to alleviate inequality, poverty and injustice and has been functional in almost 70 countries with the collaboration of various partners.[2] It has been working in different areas for improvement such as WASH (water, sanitation and hygiene), disaster management, food security, climate change and natural resources management, gender equality, peace building and urban programming.[3]

Campaigns on climate change, food security, and livelihoods

We push for safer worker conditions, fairer trade and wages for the poor, in order to build their resilience to climate change.

Gender justice

We work to end violence against women, girls, and sexual minorities. We take action to ensure their access to quality education and reproductive health services.

Humanitarian response and disaster risk reduction

Through our Saving Lives Now and in Future Programme, we provide humanitarian assistance during emergencies and prepare people for future disasters.

Peacebuilding

Through our Peace & Harmony Programme, we work towards achieving effective citizenry, participatory governance, and peaceful co-existence.

Urban programming

To be poor in a city is to experience a particular kind of vulnerability. Through our Urban Programme, we work with the urban poor in ensuring gender sensitivity and sustainable urban policy reforms.

2. Building Resilient Communities in Pakistan Project (2018-22)

Building resilient communities in Badin, Pakistan is a project funded by Oxfam GB and implemented by HANDS in 60 villages of 3 UCs in Badin.

To cope with shocks and stresses, famers and their families often resort to taking children out of school (especially girls) taking loans or credit from landlords; forgoing necessary health care due to the costs associated with treatment, transport and potential missed work days; and migration to urban centers for economic opportunities, which increases the care burden on women and risks of gender-based violence (GBV).

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[1] https://www.oxfam.org/en/what-we-do/countries/pakistan
[2] https://www.oxfam.org/en/what-we-do/about/what-we-believe
[3] https://www.oxfam.org/en/what-we-do/countries/pakistan

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2.1.   Focus of the project

The Building Resilient Communities in Pakistan Project (2018-22) has focused on ***adopting climate-smart agricultural techniques***, ***diversifying livelihoods***, and ***applying an appropriately designed risk transfer***. The project works with the communities and government to support local development plans to reduce poverty. The project specifically targets women, young people, and people with disabilities who are particularly vulnerable to the impacts of disasters and climate change in Badin. The project adopts a strong focus on gender equality to ensure women's opportunities for full participation and empowerment through the project. The project aims at:

- Improving the resilience of rural communities and government authorities in Badin;
- Building understanding, knowledge and skills to prepare for, adapt to and mitigate climate and disaster risks.

2.2.   Study Objectives

The study under discussion is held to gather information against the following two objectives:

Objective 1 Evaluation against DAC Criteria

To assess performance of the project in contributing towards its stated objectives through learning and reflections by applying DAC criteria

Objective 2 Measuring Resilience

To establish retrospective resilience baseline in selected villages from both program and control UCs by applying resilience radar methodology.

Figure 1: Objectives of the Study

2.3.   Geographical Scope

Study will be conducted in Sindh: district ***Badin*** where beneficiaries of different project activities are present and its surrounding area ***Thatta*** for a comparative analysis.

2.4.   Timeline

The contract was initially planned for one-month (17th March to 17th April 2021) assignment however owing to the fasting month (Ramazan), the increase in Covid-19 cases and resultant lockdown followed by Eid holidays, no cost extension had been provided till June 5th.

3. Methodology

The study was based on both primary and secondary information gathered from target and non-targeted areas. A two-pronged research study design is used to cater to the research objectives and subsequent questions. Qualitative data collection, including FGDs and KIIs method was used to gather information around DAC criteria questions that fall under objective A; while quantitative data collection was adopted to address the indicators under the Resilience Radar Methodology to assess community resilience in both targeted and non-targeted neighboring areas. Resilience Radar Manual[4] was used as a guiding document for tool adaptation and data collection. Key indicators covered to gauge community resilience under Radar method included: Community capacity, social capital, inclusiveness only.

Targeted Project Area
(3 UCs in Badin District)

> **Qualitative Evaluation against DAC Criterion focusing on Objective A**

> **Community Assessment using Resilience Radar Methodology (Quantitative) for Objective B**

Non Targeted Project Area
(3 UCs in neighboring District)

> **Community Assessment using Resilience Radar Methodology (Quantitative) for Objective B**

RESELIENCE RADAR

(a) To assess the resilience of targeted project area (3 UCs of Badin) and then to compare with non-project area (3 UCs in neighboring district), to find the difference in climate smart practices and resilience level of communities.

(b) To measure the current status of components of resilience radar like Connectedness (COI), Community capacity (NRH), Inclusiveness, Community Capacity Assessment Index, and Social Capital by following resilience radar

LEARNING & REFLECTION

- To assess the resilience of rural communities in Badin (especially to recent disasters floods, COVID19, and locust attacks); To measure the resilience of small-scale farmers to anticipate, prepare for, and mitigate the risk of disasters and climate change, especially that of women, youth and people with disability;
- To evaluate understanding, knowledge and skills of rural communities in Badin to prepare for, adapt to and mitigate climate and disaster risks; how effectively was technology leveraged in DRR and how successful were the community structures in promoting resilience;
- To capture the key learnings and best practices within different components of projects; to evaluate project initiatives and components on set of questions following DAC criteria. (given below);
- To assess the level of awareness (e.g., receptiveness) of communities/ households currently adopting climate smart agriculture practices; how effective were the trainings and expert visits in promoting CSA;
- To assess the effectiveness of project interventions in promoting alternative livelihoods, access to market or livelihood opportunities for men, women, and PWDs; how effective were the trainings and follow ups.

Figure 2: Methodology

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[4] https://preparecenter.org/sites/default/files/resilience_radar_manual_v_1.1.pdf

3.1. Sampling technique

Stratified sampling technique was adopted to ensure equal representation from all segments of the local population including: males and female agriculture workers, women leaders, youth and marginalized groups including persons with Disabilities (PWDs) and ethnic minorities. In addition to this, stakeholder representatives (e.g. line departments and CSOs etc.) were also reached for data collection.

3.2. Comparative analysis

In order to select a neighboring district for comparative assessment, it is pertinent that the non-target district has similar demographics and climate conditions. Considering this, Thatta fits the criterion and data collection was done in three UCs of the district with similar community representatives. As per the study objective, this data collection was done only to gauge community resilience using Radar methodology. It is pertinent to mention that same quantitative tool (survey) was used for Badin and Thatta to gather similar information from both research groups.

Over all the study was held in three key stages. The inception phase included development and finalization of sample size and data collection tools followed by the primary data collection, and methodology and tools finalized after consultation with the client, field teams will be deployed for data collection for both objectives; while third phase include: data analysis, identification of key findings and development of report.
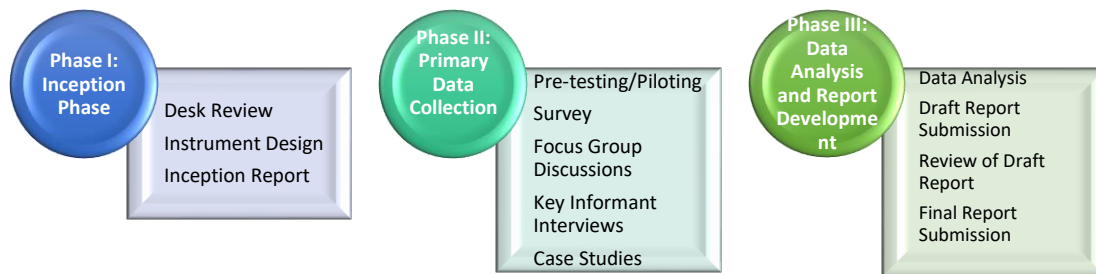
Phase I: Inception Phase	Phase II: Primary Data Collection	Phase III: Data Analysis and Report Development
Desk Review Instrument Design Inception Report	Pre-testing/Piloting Survey Focus Group Discussions Key Informant Interviews Case Studies	Data Analysis Draft Report Submission Review of Draft Report Final Report Submission

Figure 3: Study Stages

3.3. Study Respondents

The respondents for both the quantitative and qualitative tools have been identified keeping in view the study objectives. In Badin, survey respondents included community members i.e. agriculture workers, women leaders, youth, minorities and persons with disabilities that are direct beneficiaries of the project as the aim of the survey is to assess the current level of resilience of the community and establish a retrospective baseline in the selected program and non-program villages. The same set of respondents shall be reached for FGDs and KIIs for insights and detailed information against the established and identified DAC criterion.

KIIs with IP, district authorities, NGO, medical health practitioners and provincial authority helped build the context for project interventions and see whether interests of the community were aligned in the implementation process. While in Thatta, agriculture workers and youth were reached for data collection (including both male and female); the respondents also included persons with disability and minorities. Separate tools were developed for community members and other stakeholders to gauge project performance on the criteria mentioned above.
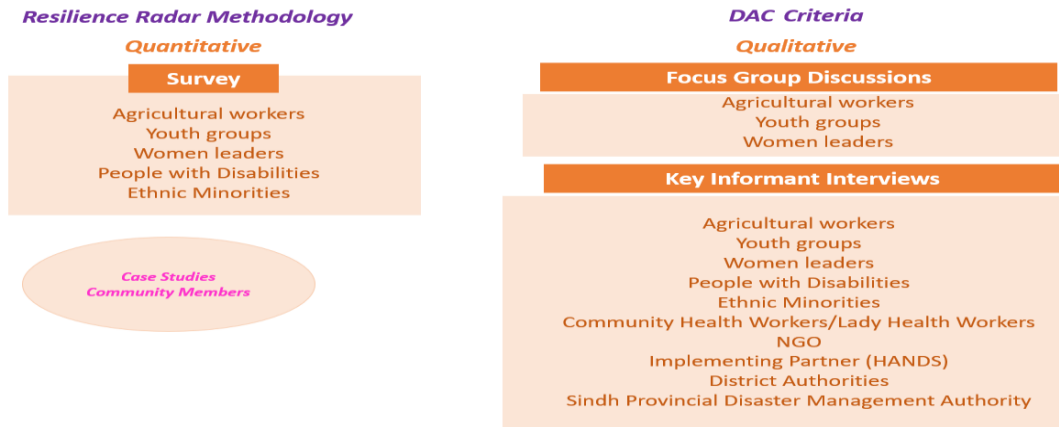
Oxfam

Figure 4: Respondents Details for Quantitative and Qualitative Data Collection

4. Sampling Approach

The sampling matrix given below has been developed in-line with the target beneficiaries and design of project interventions. Purposive sampling technique is used for qualitative side of research; based on the geographical reach of both objectives i.e., 3 UC from target district and 3 UCs from non-target, the respondents were selected from all UCs in equal proportions to evaluate if the interventions have been successful in touching all the areas in a uniform manner.

The following sampling matrix (Table 1) outlines the details of qualitative data methods, respondents and numbers of data collection activities in each UC for each of the research objective.

Sampling Matrix: Qualitative Data					
Respondent Groups	FGDs			KIIs	
	Objective 1	**Objective 2***	**Survey**	**Objective 1**	**Objective 2****
Agricultural workers	12 (6M/6F) *(04 Per UC i.e., 2M/2F)*	12 (6M/6F) *(04Per UC i.e., 2M/2F)*	192 *(96 obj.1 & 96 obj.2)*	04 (2M/2F)	KIIs not applicable in non-target areas
Youth groups	06 (3M/3F) *(02 Per UC i.e., 1M/1F)*		48	02 (1M/1F)	
Community health worker/LHWs				*03 (01 per UC)*	
Ethnic Minorities				03	
Women leaders	03 (1 per UC)		24	03 (1 per UC)	
Persons with disabilities				03 *(At least 1 Female)*	
Relevant local NGOs				01	
Implementing Partner				01	
District Authorities				02	
PDMA				01	
Total	**21**	**12**	**264**	**23**	

Table 1: Sampling Matrix

Note: *FGDs for objective 2 (non-target area) were conducted to gauge resilience of community against disasters, climate change, and prevalent practices in absence of project interventions. This is used to corroborate information collected through surveys. For objective 2 a separate tool of FGD was developed and used (see tool 2.1) for the same.
** Survey tool based on Resilience Radar Methodology were used to establish a baseline for comparative analysis with the target area.

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The sampling approach proved beneficial in a number of ways as indicated below:

- Purposive sampling suited the requirement of study objective(s) for both quantitative and qualitative data collection; also, it helped to corroborate the findings and authenticate the data collected through survey.
- Same respondents for FGD and survey helped efficient use of resources.
- Trust and comfort with respondents that was built during FGDs helped in smooth execution of survey.
- Lastly, given the COVID-19 context, it was easier to establish safety protocols among the team and respondents.

The identification of respondents was facilitated by the implementing partner HANDs. A detailed sampling plan along with workplan was shared with HANDS staff. The sampling plan included respondent groups and selection criterion for each target UC, for each category ensuring the representation of vulnerable groups i.e. minorities and persons with disability. HANDS staff facilitated in identifying various respondent groups for the data collection activities.

Limitation and Challenges

The limitation posed by research design and schedule along with mitigation strategies are detailed below:

Issue/ Challenges to Design	Mitigation Strategy
In Badin, respondents for both quantitative and qualitative data were same.	The sample size, statistically calculated, as representative of the target population remained the same. The sample size was achieved as per the statistical representative sample for the survey respondents.
The quantitative findings from Badin represent the current situation, as of post project intervention, thus cannot be used as baseline.	Thatta, a neighboring district with same demographics and characteristics, is chosen for the baseline data to draw a comparison for pre and post intervention.

Quality Control Procedures

Quality control measures were implemented to ensure that data were collected, managed, and utilized with accuracy and precision. Quality control was ensured through hiring of appropriate staff, adequate staff training and piloting of data instruments.

☐ Hiring of Staff

Recruitment of qualified and competent supervisors, enumerators and surveyors and data clerks was a key pre-requisite for the study to be undertaken; for ensuring quality of data and survey results. A thorough plan was developed according to the TORs of the research study outlining the human resource required along with relevant qualifications, experience and expertise. Job descriptions for each role was developed to define the scope of the position and responsibilities.

☐ Staff Training

Training of the survey and qualitative research team was the key to quality. Training was conducted before and during the data-collection process, and ended with a detailed debriefing after the fieldwork period is completed. Staff training was provided at all levels of the team involved in the survey, from interviewers to supervisors, as well as to the central team overseeing the process nationally. The purpose of the overall training was:

- Develop understanding on the rationale and objectives of the study
- Training of data collection protocols including ethical considerations and other rapport building techniques
- Develop a uniform understanding of all the enumerators on data collection tools

- Provide clarity to interviewers to safeguard unambiguous data collection
- Provide practical suggestions for work plan implementation as per the timeline
- Responding to any queries raised by enumerators

☐ Quality spot checks (Virtual)

In order to ensure data quality, cohesion and complete use of tool, quality check was developed at periodic basis; this helped with assessing understanding of enumerator of assignment and tool, comprehensive and complete draft of transcriptions and providing backstopping for any bottlenecks. The quality checks, though were virtual, however it helped the lead researcher to understand the field updates, timeliness of data collection along with quality of data through virtual review of forms and transcripts and provision of feedback to team. The team remained in touch via whatsapp group where updates on daily targets has been updated. In case of deviation of plan and new strategy to mitigate the change was also shared by the relevant team members with lead researcher. Also, each filed team members shared his/her work quality through regular sharing of transcripts or filled templates. This exercise proved very helpful in coordinating the data collection while ensuring uniformity of data.

☐ Ethical Consideration Adopted in Field

The assignment was primarily based on the ethical principles of respect, beneficence and justice. To this end formal approval was sought from respondents for data collection. Information gained was solely based on the voluntary consent of the participants. This implies that participants had all the relevant information about what the assignment was, were free to choose whether or not to participate and gave their verbal consent. Participants were also asked if they can be quoted in the case studies/success stories. Approach of asking question from the participants was respectful and questions were phrased in a culturally appropriate language. Data collection was carried out in places that were socially comfortable for female participants, and where they were able to speak freely.

The study design was organized in a manner that conformed to and respected the rights and welfare of the public involved. The participants' anonymity and confidentiality were strictly ensured whereas; visual data was protected and used for agreed upon purpose only.

In addition, principles of personal safeguarding, non-discrimination, do no harm and personal freedom to opinion had been observed by all the field members. All the respondents were given fair and equal chance to share their opinion and no was given preference over other for holding certain views.

☐ COVID 19 SOPS in Field

Keeping in view the current scenario of global pandemic, all data collection was carried out by strict adherence to COVID 19 protocols. Evidence of negative COVID 19 test was required as a prerequisite for the hiring of field team. Enumerators were specifically instructed to ensure all COVID 19 SOPs during field. All of the enumerators wore masks, gloves, carried hand sanitizers and ensured social distancing while interacting with the community people. Moreover, the participants who were not wearing mask during FGDs and KIIs were also provided with the masks for mutual protection and safety.

Primary Data Collection – Methods & Respondents

FGDs comprised of various community groups including male and female (including representation from PWDs and Ethnic minorities), it was ensured to record voices from all local segments of community for the quantitative data as well. All respondents of FGDs were also reached for the quantitative data (survey) collection.

A total of 267 respondents were reached for data collection in both Badin and Thatta. Out of these 171, 146 females were targeted while 121 male community members were reached for data collection.

In Thatta a total of 12 FGDs (6 Male and 6 Female) were held. A total of 96 (48Male; 48 Female) respondents were reached in Thatta. The data collection in Thatta was only around objective 1 i.e. gauging resilience of community members.

Figure 5: Gender Wise Respondent

While in Badin, a total of 21 FGDs (12 Female; 9 Male) were conducted. A total of 171 respondents were reached for survey in Badin which included agriculture workers, youth group members, women leaders etc. Also, ethnic minorities and persons with disability were also included for this data collection.
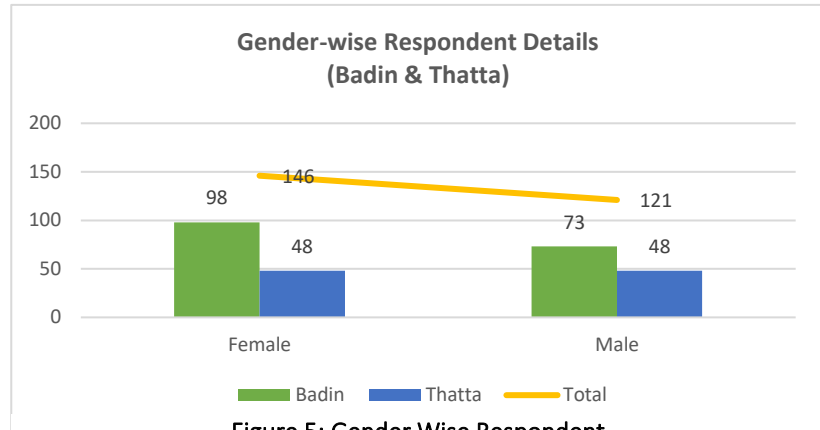
Guide to Report Structure

Given two separate and standalone objectives of the study, with respective data collection approaches, the report is structured with two main sections of findings and analysis catering to each objective.

Chapter 5 is a description of findings and analysis of Objective 1 (mid line evaluation of project), while Chapter 6 is about the qualitative findings and analysis around Objective 2 of community resilience, in Badin and Thatta.

Each chapter is structured in a way that it can be used as independent reports around the study objective.

5. Mid Line Evaluation Against DAC Criterion

A key objective to undertake this study was to hold mid-line assessment of project to assess performance of the project in contributing towards its stated objectives through learning and reflections by applying DAC criteria.
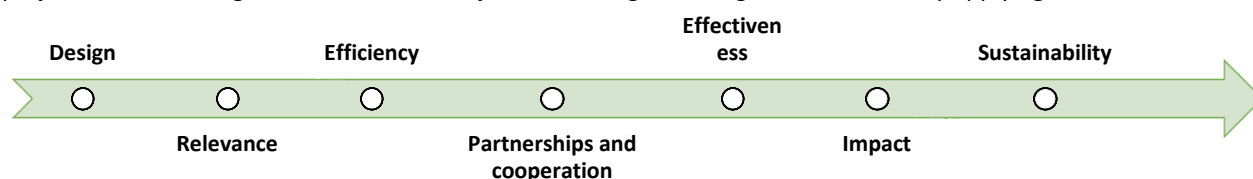

Figure 6: Framework for DAC Criteria

As mentioned earlier, a qualitative approach is used to collect information against the research questions against various components of DAC criterion. Tools for qualitative data collection (FGDs and KIIs) were designed according to evaluation framework given below:

Evaluation Criterion/Questions	Literature Review	FGDs	KIIs
Design			
Is the design the most appropriate to meet the needs and context identified?	X	X	X
Relevance			
To what extent were the outputs and outcomes of the intervention achieved and what were the major factors influencing the achievement or non-achievement of the outcomes?		X	X
Are the alternative livelihood options viable for women, men and persons with disabilities? To what extent these are adding value in resilience building?	X	X	X
To what extent modern climate smart practices aligned to contextual need? Are these being replicated, cost effective and friendly to use? How satisfied communities are with it?	X	X	X
To what extent participation of vulnerable groups (women, PWDs and minorities) in VDMCs and UDMCs supporting the community DRR needs? How effective were the social structures in combating recent disasters (floods, locust attacks, and COVID19)?		X	X
Efficiency			
How effective is early warning system?	X	X	X
Are communities improving agri-practices by using ari advisory app? What is the level of access of app? Who is able to access (gender, disabled, minorities), How efficient is it in resolving issues? How effective are the early warning systems?		X	X
How is the Project contributing to the resilience of communities in the face of disasters (floods, locust, and COVID19)		X	X
To what extent, for Power and Agency, which of the following are changed positively or negatively? 1) Self- efficacy, ability to make decisions 2) Control of household resources 3) Women's access to information and technology 4) Women's participation in community groups 5) Women's involvement in community decision-making. 6) Women have leadership roles in the community?		X	X
Partnerships and Cooperation			
To what extent have partnerships been sought and established and synergies been created in the delivery of assistance? How effective were DRR coordination Meetings (District and Sindh Chapters)?	X		X
Effectiveness			

How effective is village level leadership? Is there a positive impact on resilience of communities?		X	X
Are the planned objectives and outcomes in the project document achieved?		X	X
Impact			
What are the results achieved beyond the log-frame?		X	X
Sustainability			
How will project strengthen and sustain its impact during the remaining period?		X	X

Table 2: Evaluation Questions as per the DAC Criteria

Data Collection: Design and Details

The data collection comprised of a total of 21 FGDs and 23 KIIs in total. All the data collection was done conducted in 3 UCs (Abdullah Shah, Shaheed Rani and Nindo) to collect information around the research questions for this assignment.

Focus Group Discussions: For FGDs, a maximum of 8 participants comprised the group for discussion. As shared earlier, FGD respondents included agriculture workers (12 FGDs), youth group participants (6 FGDs) and women leaders (3 FGDs). Separate FGDs for male and female respondents were held.

Key Informant Interviews: Likewise, a total of 23 KIIs were held with both community level respondents and key stakeholders including *provincial and district authorities, implementing partner staff, representative of NGO as well as beneficiaries*.
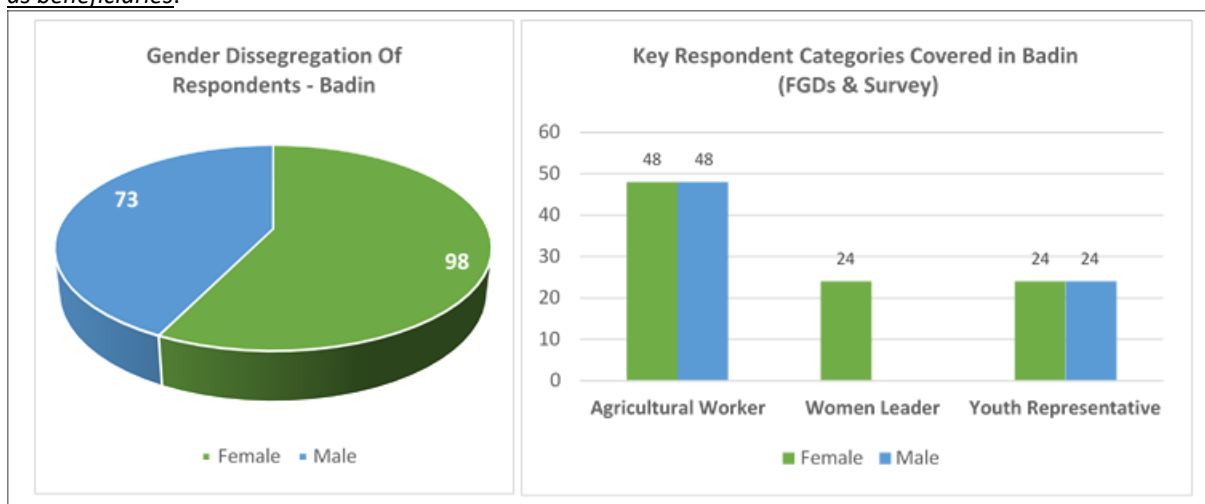

Figure 7: Key Respondent Categories Covered in Badin

Separate set of tools were developed and used for each respondent category. A list of open-ended questions was included in FGD guides and semi-structured key informant interviews. Each question was followed by respective relevant probes where required. The probe questions will help the enumerator to gather all the required information in a more coherent and uniform manner.

Ethical Considerations: Interactions with the respondents were made after obtaining their ***formal consent***, and the purpose of data collection and use of the collected information were explained to them accordingly. The evaluation team strictly avoided engaging in any conversation of a political or religious nature, and did not use any jargons, words or gestures those can be offensive on religious, ethnic, gender, age or any other ground. The picture of community meetings were taken with the formal consent of the FGD members. The team did not guide/or instigate respondents to provide specific answers, nor will they misinterpret the survey participants' inputs or distort these. ***Safety and security*** of the participants remained of paramount importance and evaluator did not act in any manner putting security & safety of the participant at risk. Interaction with respondents was guided by Oxfam's safeguarding policies. The study design will be organized in a manner that conforms to respecting the rights and welfare of the public involved. All documents and data collected are treated as confidential and used solely to facilitate analysis. The study ensured human subject protection.

5.1.   Findings & Analysis

Design and Relevance

1.   Design: Alignment with local needs & context
Is the design the most appropriate to meet the needs and context identified?

The project is designed around two key outcomes related to community capacity leading to resilience and enhanced capacity, commitment and accountability of government for DRR.

Considering the outcomes and the planned activities to achieve these outcomes,

In order to gauge the alignment of project design and the community needs, the study collected information on the issues that were at forefront of the target community and were recognized as some of the most pressing issues to be addressed. Owing to the its tail end location of Indus Basin, Badin district face severe challenges both in terms of livelihood and survival. The study findings highlighted the issues that are mainly caused due to increased demand of irrigation water and deteriorated institutional capacity for effective and efficient irrigation posing issues for the tail end users who are unable to receive the due share of water.

> *This project is aligned with needs of our community, with the support of (Ba Khaber Kissan)*
> *we can make improvement in our crop production, can reduce disaster risk, and also can know*
> *about weather conditions. (KII Agriculture worker – UC Nindo)*

The data gathered around design aspect of evaluation identified the following needs of the community that are been adequately addressed by project design and interventions:

☐ Lack of Community Capacity

Under relevance section, element of community capacity remained on key aspect where the study gathered information. The findings largely indicated that prior to project implementation, community was devoid on any platform which helped them gather and discuss their mutual issues. The elements of unity and resultant trust on each other was not evident. Moreover, prior to project implementation, there was no specific planning mechanism available particularly at village level. Owing to missing early warning system people used to face challenges during natural hazards and disaster. Vulnerable groups used to suffer most at hands of disasters. Various segments of community including youth, women and elders including agriculture labor and workers all used to be on their own owing to the absence of community led structures. The social isolation and lack of communal platforms led to minimal communication, and information sharing with each other. This issue further aggravated the challenges faced during hazards and other climate change issues.

☐ Barriers in agricultural practices owing to district location

Main livelihood source of the communities in Badin is agriculture. The communities work as agricultural workers and their source of income if dependent on the quality of crops they produce. The coastal district is situated at tail end which strikes a major challenge for the locals to ensure good quality crop. The study findings glaringly highlight the issue of lack of irrigation water which becomes a major challenge for the agriculture workers to irrigate the crops with ample water at the time required. Lack of water result in affecting the crop thus damaging the quality and quantity of harvest.

> *"We hardly get enough water for our crops. The irrigation system is bad and lack of water*
> *used to affect our crops resulting which remained a consistent issue for us."*

Another issue that had been consistently identified by the study respondents was of soil quality. Owing to its location, the soil quality is a major hindrance in producing good quality crops. The proportion of sea sand is high in the soil which hamper the agricultural activities. The community respondents highlighted this as a major issue that had been addressed by the project.

"There is high proportion of sand in local soil. We are located near the sea which cause this issue. However now we know how to mitigate this issue. The project helped us to overcome the problem of soil quality."

☐ **Barriers in agricultural practices owing to lack of knowledge**

The respondents of Badin unanimously agreed to the fact that they had minimal knowledge of modern agricultural techniques and low-cost solutions for the issues faced. Almost all the respondents both males and females, frequently mentioned of their lack of knowledge and awareness on pesticides and fertilizers that could have helped them resolve the related issues.

In addition, almost all the respondents also mentioned that they were not fully aware on the seasonal crops to be cultivated at particular time of year. Neither did they use to cater to the change in climate issues while cultivating the crops which had an impact on their practices. They used to follow the age-old agricultural practices and were not aware of the modern techniques to be adopted in order to address the changes in weather.

Before interventions of HANDS we were unaware about disasters; we used to face loss owing to lack of rain. We didn't have any information or warning about weather or disaster; this project helped us with it and installed weather station; now we can easily know about weather condition and through this weather station as we get early warning about upcoming or possible storm in response to which we quickly disseminate information to other people/clusters. The project also helped us with information on crops to be harvested according to seasons and weather conditions. HANDS also worked on Livelihood and supported those who got losses due to Covid-19 lockdown. Due to HANDS we are now aware and can think about our community.
(FGD Youth Group – UC Nindo)

☐ **Climate change: Disaster Prone Area**

Over the years the district has encountered numerous waters related natural disasters including floods (2010, 2011), cyclones (1999) and man-made disasters (LBOD). The findings from study are reflective of the poor disaster risk management in the area. Almost all the respondents agreed to the fact that owing to high risk area for disasters, the locals face a lot of issues. They lose their assets and crops if and when the floods or heavy rain or any other disaster hit the area. The local communities have had no knowledge of rescue, protection and safety during disasters; the findings suggest that combating with disaster remained a key issue faced by locals as they had hardly any support structures at community level to plan and mitigate the problem.

We have a major issue of water, we don't get enough water for our crops, as we have now season of rice crops, but we have issue regarding water, during some rains we get water but due to heavy rains we also lose our crops; 2nd issue we have that we face diseases in our crops, as our crops face disease, so we also face losses, even not any medicine is beneficial for it. We have tried many times to get rid of this, but we failed. There are also issues regarding rates, traders don't give us good rates for our crops. We sale rice crops to traders they give us 1600 rupees per mann, but after season when we purchase then they sell it on 2100 rupees. We have too many issues but we cannot solve, only we can ask government for support but they don't do anything.

(FGD Youth Group – UC Nindo)

☐ **Absence of Alternate Livelihood Means**

The local communities are poor and agriculture is considered to be a key mean to livelihood to the larger fraction of population. The community lack resources and skill to opt alternate livelihood means thus they had to suffer and endure the issues originating from climate change, natural disasters, poor agricultural practices and lack of access to smart agricultural practices and techniques. The findings show that local communities neither have skills nor any resources to adopt alternate livelihoods. In such case women and persons with disability remained the ones who suffer most because of lack of opportunities.

2.   Achievement of Outputs & Outcomes: Contributing Factors

To what extent were the outputs and outcomes of the intervention achieved and what were the major factors influencing the achievement or non-achievement of the outcomes?

The information gathered through findings reflect that even though the project is in midway of its execution, quite a number of outputs especially related to community are achieved and are in process to be materialized. The data gathered from Badin showcase major achievement and successes of project including increased capacity of village level committees and communities regarding disaster risk reduction (DRR) through effective planning, availability and access to updated information related to agricultural techniques and climate smart practices, updated information on modern agricultural skills, access to information related to upcoming disaster through early warning system and enhanced skills of adopting alternative livelihood means especially by persons with disabilities and women.

As per the findings from FGD respondents, the trainings are widely attended by both male and female community members; participation level in the trainings reflect the enhanced capacity and improved knowledge of community on agricultural practices and climate smart initiatives. Mostly the trainings are focused for youth groups and agriculture workers while a number of specific training areas were reserved for vulnerable groups including women and PWDs. The knowledge that is reflected from findings confirm that the capacity building activities have already started translating in their practices.
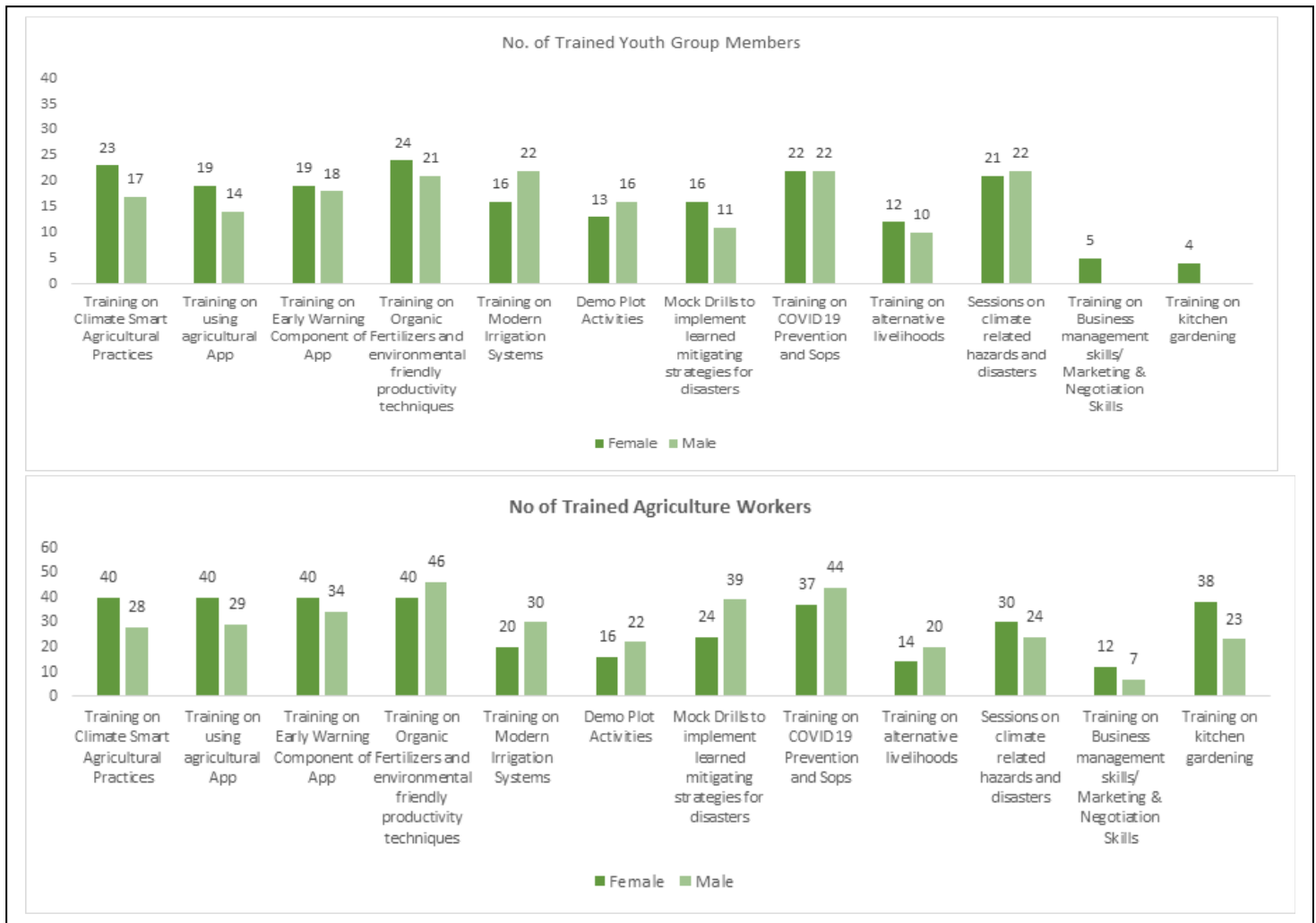

Figure 8: Trained Groups

As reflected through participation level in trainings, qualitative findings from study consistently echoes of the knowledge and information gained from trainings and initiatives taken by project. The participants ardently talked about project initiatives and how it helped change their practices and lives.

> *We were unaware that new technology can also be beneficial for us; we had no clue that we can make our own fertilizer. The project gave us a mobile and introduced an app named **Ba Khaber Kissan** which can help us in managing and reducing risks of disaster. The app can also improve our agricultural crop production. It tells us ways to fertilize crops, frequency and timings for irrigating the crops, and the kind of pesticides to be used to avoid diseases. Also, it provides information on livestock management. (KII Youth Group – UC Shaheed Rani)*

Majority of the respondents mentioned that the project helped the community to be more vigilant and prepared for with stakeholders is effective which help each one of them remain updated especially during or in case of possible natural calamity.

> *In case of disaster, we would go to a safe place near the village and will give priority to disable persons, women and old men and women. We are also trained to contact UDMC and Government line departments. Almost everyone has a mobile phone in our village; even girls know how to use mobile.*
>
> *(FGD Youth Group – UC Abdullah Shah)*

Another group expressed about their planning and liaison with government officials as:

> *We are always making ourselves to combat with future disasters; we have selected some places, where we can shift our community which is some kilometers away from our village. We also have some actions plans for emergency on UC level. We also have communication with government and non-governmental organizations, youth group will also reach them for support, we have also ensured raised floor in our homes due to DRR purpose.*
>
> *(FGD Youth Group – UC Nindo)*

In addition, findings from field suggest that inclusiveness remained a key factor that is helpful in attainment of project outputs and outcome. Both male and females are equally participating in the project as per their capacity, role and responsibilities and issues faced, in the livelihood cycle. Likewise, inclusiveness of various segments of community including youth, women leaders, agriculture workers, persons with disability and minorities were involved in various capacities and for various relevant needs which proved helpful in ensuring that all community members get support for resilience. Also, every stratum participated in given capacity to act as building blocks and support each other during difficult times. The study finding reflect that both male and female community members unequivocally shared about them participating in trainings including that of related to DRR, agricultural practices, irrigation water supply, demo plot activities, alternate livelihoods etc., which helped build their capacity. Similarly, persons with disability and minorities also participated in various activities and interventions.
The inclusiveness, in a way ensured an integrated project design that is not only aligned with community needs but are also acting as building blocks thus resulting in connectedness of the community.

> *We were unaware of agricultural techniques, we didn't know that which scrop we should harvest on what time, in beginning when they used to come to our village, and briefed about project activities. They gave me a mobile phone for using application (Ba Khaber Kissan) and now we are using this mobile and also apply techniques for crop productivity then we also get profit, for example if we harvest tomatoes, which disease can affect it, then we use to share picture of our crop through this application and they respond quickly, even when our livestock got sick, we called a livestock vet doctor and he charged 1000 rupees for one injection and our*

goat was still sick, then we took a picture and sent them, they suggested medicines, we gave
that medicine for two days and that goat become normal and healthy, so this application is
really beneficial for us. We also learnt from this that when we should give water to our crops.
(KII Minority representative – UC Shaheed Rani)

3. Alternative Livelihood Options

Are the alternative livelihood options viable for women, men and persons with disabilities? To what extent these are adding value in resilience building?

The project planned activity and training on alternate livelihood for selected beneficiaries focusing on women and persons with disability. All the respondents of study seem to be aware of the initiative and expressed their satisfaction on the opportunity. Majority of respondents were appreciative of the initiatives and mentioned how this helped the target beneficiaries.

The project provided training to persons with disability about how to earn money through
alternate livelihood means e.g. through corner shops, raising chicken honey making skills etc.
(FGD Women Leader – UC Abdullah Shah)

I know of a woman from our village who got this training; she learnt training on skills to make
business more profitable. I feel personal business is better than farming, this livelihood has
more benefits then farming.

(KII – Agriculture worker – UC Nindo)

There is a woman who got support of alternate livelihood, and that woman is earning good
from that livelihood source. We also want to adopt that strategy however we don't have the
sources to do that.

(FGD – Agriculture worker – UC Shaheed Rani)

The project introduced various alternative livelihood options including stitching, corner shops, honey making, soap and detergent making and establishing poultry setups. Almost all of the participants shared that these options proved useful to a large extent, however, the corner shops remained significantly successful and had been appreciated and acknowledged by majority of the community members.It seems that people now are aware of options of livelihood suiting to their needs and are trained and skilled to initiate a business. Given the financial status of the community, it seems imperative to focus on financial management training. Quite of few respondents mentioned that though they did get a training on alternate livelihood means followed by the supplies which they used to earn through an alternate mean however once they ran out with supplies, they didn't get a chance to utilize those skills again owing to lack of resources and lack of accessibility to city. The findings reflect that other than livelihood training, possibly the respondents also need to strengthen their business skills, financial management and most plausibly the market linkages so that the cycle of earning from alternative mean does not break.

> **Improved Livelihood & Living Conditions**
> My husband used to go to Karachi for livelihood opportunity. He worked as a laborer and had to stay in Karachi for days and weeks. I used to be alone here in Badin while he was away. This project provided me with training on Alternate livelihood and opened a corner shop with the project support. Now my husband doesn't need to stay away from home and family. He helps me with my business by getting me commodities from market and I earn through this corner shop. Previously our monthly income was PKR.10,000 however with this shop, now I earn between PKR.15,000 to 20,000 per month.
>
> ***UC Shaheed Rani***

The material that we received for alternate livelihood, we
have consumed it. I request to provide us more material so
that we can do business again. The material is expensive and
in order to buy it, we have to travel to Hyderabad. We don't have enough resources for that.

<center>*(KII Women Leader – Shaheed Rani)*</center>

In addition to this, the issue may need a more focused redressal through connecting the beneficiaries to the MFIs to sustain their business and alternate livelihood businesses in the longer run. Introducing a feasible and acceptable option of loans will help the beneficiaries to scale up the business opportunities thus transforming their lives for a improved living conditions.

4.   Modern Climate Smart Practices

To what extent modern climate smart practices aligned to contextual need? Are these being replicated, cost effective and friendly to use? How satisfied communities are with it?

☐   Use of Ba Khabar Kissan

While discussing about the project interventions, majority of the findings found to be appreciative about the Ba Khabar Kissan app. which helped the community to stay updated on climatic conditions, advisory on crops to be cultivated in specific seasons, timings and frequency of watering the crop, information on pesticides and fertilizers and livestock management etc. The respondents from all cadres unanimously agreed that the mobile app and the information that is provided to them in alignment with the local weather and climate are proving beneficial for them as a community. The respondents vehemently mentioned of project's contribution to their needs related to agriculture. Quite a number of respondents mentioned that untimely rainfalls or droughts often hit them hard resulting in challenging times.

<center>*I have access to mobile phone and I am able to use this application, this application is very*
helpful for us; it gives us information about any disaster and upcoming rains in our area. Also,
the it keeps us updated regarding weather on early warning.</center>

<center>*(KII – Minority representative – UC Shaheed Rani)*</center>

Another youth group expressed their sentiments as:

<center>*This application (BKK) is very beneficial for us as we get timely information about any disaster*
so we can do something for our community timely. We also can keep some food items for us
and also can save our important documents if we get timely information, so this application is
very helpful for us… As we can see our community has adopted smart practices, application
for early warning, and is disseminating information with others so it means this project is
going to success.</center>

<center>*(FGD – Male Youth Group – UC Shaheed Rani)*</center>

Likewise, agriculture workers are also of the same positive opinion;

<center>*I am very glad to share this that this application is changing our community, because we all*
are farmers, and this application reduces disasters and other issues regarding our agricultural
crop production, we also can mitigate risks of disasters through getting information before
the disasters.</center>

<center>*(KII Agriculture worker – UC Nindo)*</center>

☐   Use of modern agricultural techniques

Similarly, there is frequent mention of lack of knowledge of modern agriculture techniques which after project initiative helped them yield better crops and harvest. Almost each one of the study respondents mentioned of their lack of knowledge and skills for agricultural practices in a high risk and disaster-prone area having low quality soil, lack of water supply and frequent shortfall of harvest owing to lack of water.

They feel better equipped and empowered to combat with agricultural challenges that they faced and better prepared to combat with any natural disaster. In addition to this, the study respondents consistently mentioned and

appreciated the smart agriculture techniques which project is helping them with through demo plots, trainings and sharing of information through various means.

> *We have water issues, as we don't have water for our agriculture crops and our land owner don't give us timely seeds so it also costs loss, agricultural fertilizer is also much expensive for us to buy... In smart agricultural practices they have introduced us that due to shortage of water we should harvest those crops which utilize low water. We were unaware before this but now we implement this strategy in our crop productivity. (FGD Agriculture workers Male – UC Shaheed Rani)*

Similar life changing experiences were shared by another representative from other target UC as:

> *I want to share an experience which happened with me; before this project (HANDS) I was unable to harvest my crop on my land due to shortage of water; however, the project staff shared us with information on crops that can be harvested with less amount of water. We were also made aware about various other smart agricultural practices. This knowledge changed our lives... Early warning system is very useful for us, this system supports us before disasters, if any disaster will near our area so this system will locate it and time to time will update us. (KII Agriculture worker – UC Nindo)*

Quite a considerable number of respondents were happy and satisfied about the information sharing mechanism. The feel connected and better-informed using mobiles. The community has an established mechanism of smooth flow of communication and information sharing even with those who don't have access to mobiles.

> *With the support of mobile, we communicate each other, and if anyone don't have mobile then we go to people and share required information, people are now aware of this, so if they require any information they come to me and ask for help from the application. (KII – Minority representative – UC Shaheed Rani)*

Though a clear majority of beneficiary respondents were vocal of the benefits and successful use of the app and other smart climate practices, the findings did reflect that the initiation process of the change was not as smooth. Owing to lack of knowledge and previous experiences, community was not very open to new techniques and practices. However, the community needed mobilization and sensitization and were made realized about the causes of issues that they face. However consistent efforts and mindful strategic planning helped in brining change.

> *It was challenge to introduce agriculture smart practices and cropping calendar among communities but it achieved with passage of time and social mobilization process. And there was trend among communities that government is not functional and not supporting communities due to lack of coordination and linkages of government and communities but now trend has been changed that coordination with government brings support and assistance for betterment of communities...There was challenge that official of government changed rapidly due to their transfers and other issues therefore we faced challenges. We design trainings as per learning needs of participants and we designed trainings with proper ways.*
>
> *(KII Implementing Partner Staff representative)*

☐ **Agriculture Smart Practices being Cost-Effective and User Friendly**

Another important aspect indicating the success and relevance of the project was its focus on generating cost-effective and smart agricultural practices. The most prevalent instances analyzed through field findings were related to kitchen gardening and making organic fertilizers and/or compost. In all targeted UCs, majority of the participants shared their experiences of saving money particularly through kitchen gardening and making organic fertilizers. These two components introduced by the project proved essentially important and success in mainly two ways. First through kitchen gardening, women, especially, are becoming empowered at their household and community level; as a women focused intervention, the kitchen garden remains under access and control of community women. Secondly through economic perspective, this technique is cost effective as now community

> **Kitchen Gardening – A Blessing in disguise**
>
> The project helped us with kitchen gardening techniques and seeds. I used that technique in small area of my house. We sowed local seasonal vegetable seeds. The small kitchen garden started blooming. Now we have improved health because we can afford to eat vegetables of our own kitchen garden. Our kitchen garden has helped us ensuring nutritious vegetables for everyday meals. The vegetables are more than what my family requires thus I distribute it to neighbors as well. Our little kitchen garden hasn't only helped my family, but other households as well. We can eat fresh vegetables every day and best thing is we don't have to spend a single penny for it.
>
> ***KII Women Leader, UC Nindo***

people use their home-grown vegetables and fruits instead of buying from the markets while some of them also sell these commodities at nearby places.

> *We are very happy that we do not have to go to markets and city for purchasing vegetables. We now grow different vegetables at our home and also sell them in community and other areas (FGD Agriculture Workers Female - UC Abdullah Shah)*

Regarding the use of organic fertilizers, it was repeatedly mentioned in almost all UCs that prior to project implementation, community people used to purchase hybrid fertilizers which were overly priced and were also harmful for their crops.

> *Fertilizer purchasing was very big issue for us, then we used to learn this technique from HANDS that how we can make organic fertilizer, and it became very much beneficial, and they also tell us that which crop we should harvest in which season due to change of weather (FGD Agriculture Worker Male – UC Shaheed Rani)*

Similarly, at Nindo it was mentioned,

"They supported us fertilizer trainings, they supported kitchen gardening in our community" (FGD Agriculture Workers Female – UC Nindo)

After project's continued training sessions, community people finally started making their own home-made fertilizers which not only boosted their agricultural productivity but saved their expenditure also, thus ensuring a stable financial condition.

5. Participation of Vulnerable Groups

To what extent participation of vulnerable groups (women, PWDs and minorities) in VDMCs and UDMCs supporting the community DRR needs? How effective were the social structures in combating recent disasters (floods, locust attacks, and COVID19)?

DevTrio Consultants

As mentioned earlier, inclusiveness remained one of the key success factors in project design. Inclusion and participation of vulnerable groups including women, persons with disability, representation from minorities, all seemed to have an equal chance of participation in various project interventions. The project approach to cater to the needs of each group is strikingly successful where each group and strata is provided with opportunities. This includes kitchen gardening activity for women, alternative livelihood training for PWDs and women, inclusion of minorities in VDMC and UDMCs etc. The findings reflect that each group got representation and an equal opportunity to participate and contribute to planning and decision-making process thus ensuring that all the voices are heard and the needs of each group can be catered accordingly. Representatives from minority community of different Union Council's shared:

Community resource now they share information with us on equal grounds as we got awareness. Also, we feel empowered as we can share and express our opinion freely thus there is less conflict in community. Previously, we felt that we were not provided with our fair and due share and rights …now things have changed. We are given importance and we are always called to participate in community meetings. We are provided with opportunity to share our views regarding every kind of issue; we are also involved in decision making process. We are provided with opportunity to share our issues and problems in community meetings, and they give value to our views.

(KII – Minority representative – UC Shaheed Rani)

They tell us everything, they also call us for community meetings, and they share every intervention details and beneficial information with us… As others face issue like losses of homes, livestock and agriculture, we also face same issues, during flood we support other communities and they support us during evacuating. Other communities co-operate with us in also relief camp. (KII – Minority representative – UC Nindo)

Before this project intervention we were unable to get this information timely, even community members were not disseminated information with us timely. (KII – Minority representative – UC Shaheed Rani)

Likewise, participation and contribution from persons with disability is also reflective from findings. None of the findings mention of any concern raised in the community from PWDs for not being heard:

When we conduct any meeting, we call PWDs in meeting, because this group is so much supportive and they also feel proud to be able to participate and contribute by giving ideas for the betterment of this village. Minority groups are also got respected by other community members.

(KII Minority representative – UC Shaheed Rani)

It is however important to note their sentiments and level of trust on government authorities; the findings, at few instances show that the minority groups feel neglected while dealing with government departments. They do feel that their needs are overlooked and/or not taken seriously by authorities. This does signify a need to sensitize the departments accordingly so that in DRR plans, minority needs and rights can be addressed adequately.

As ethnic minority, no one from government officials usually came to ask us about our issues, for example when any one got accident or something terrible happened with us so they don't ask anything, but our other community members comes to us, they ask our issues, and try to facilitate us at every time. (KII – Minority representative – UC Nindo)

Other than PWDs and minorities, another major stratum that usually feels unheard and vulnerable in communities are women. Their needs, access and control over resources, their power to express opinion and make decisions are some aspects that remain neglected resulting in overlooking the needs of an important community strata. The

information gathered from study, both male and female respondents unambiguously confirmed that the project has not only provided women with position of authority (women leaders) but are also imparted with necessary skills and trainings which help them participate in community's welfare and for their family in a meaningful manner. Male members of community express their satisfaction and shared openness for women's participation in project interventions thereby contributing to community wellbeing.

> *Women participate actively in meetings, and also give views in agricultural decisions. They are illiterate but we tell them about this information and technology, they understand about application also, even they ask us updates regarding disasters and daily base weather updates.*
>
> *(FGD Agriculture worker Male – UC Shaheed Rani)*

The implementing partner staff confirmed these findings by sharing their own efforts and strategies to ensure that the project benefits every stratum of community so that all segments collective as one-unit help building each other and community as a whole.

> *Women leaders are part of UDMCs and leadership role is defined in meetings and trainings, women leaders are members of district disaster forums, different NGOs/INGOs are also members of disaster forums, women leaders participate in meetings and share community level issues. Links of women leaders and government officials are developed who are working in close coordination with them. A designated women leader, is working for promotion of girl's education in her village and adjacent areas and communities are encouraging their efforts. We have identified one women leader in each target villages and who is contributing at her village level.…most of the women have access on mobile; our women leader and trained women have access on mobile phones in result of mobilization activities of project team. Whatsapp groups of communities formed to share and disseminate information. Ba Khabar Kissa application is easily accessible through Jazz number only and they send alerts only on Jazz numbers on free of cost.*
>
> *(KII Implementing Partner staff representative)*

The findings in this regard are unswervingly are reflective of project's efforts of ensuring women participation regardless of their ethnicity; the respondents mentioned that this wasn't only limited to the majority groups but also to minority women. A respondent shared with pride that:

> *My wife is president of our village community and my sister is general secretary. Participation of women is very useful as they disseminate information regarding disaster to other females of community; they also give awareness sessions on WASH to other females. My wife also raises awareness of community women about education of female; she always struggles for education of girls.*
>
> *(KII – Minority representative – UC Shaheed Rani)*

Efficiency

This section provides information on the area of efficiency which key focus area of this evaluation. The areas explored under the umbrella of efficiency involves various research questions related to the effectiveness of early warning system, community's approach to improve agricultural practices by using agricultural advisory app, the level of access to that app and the extent to which it proved efficient in resolving the issues of the target area and its contribution towards balancing power dynamics between men and women. All of these research questions are discussed below under respective sub-headings:

1. **Effectiveness of Early Warning System**
   How effective is early warning system?

Badin being a disaster-prone area, has a history of climatic hazards and disasters in the form of floods, droughts and cyclones. Considering the geographic situation of the area, the project interventions focused on enlightening the community about early warning system. This particular system was mainly developed with the incorporation of agricultural advisory app named "*Bakhabar Kisaan App.*" The project also offered mobile phones in the communities so that they can stay updated with the agricultural updates. A women leader stated that,

> *"The project told us about early warning part of app through which we can know about dangers beforehand" (KII Women Leader- UC Shadeed Rani).*

The community people were facilitated with various awareness sessions centered on the use of this phone app which provides significant information on multiple subjects broadly related to the prediction of natural disasters and proves essentially important in terms of dissemination of knowledge related to crop production and prevention. Almost all of the participants from target UCs, unanimously agreed that the phone app helped them in planning and preparing against disaster; the app helped them being updated through indicating the upcoming plausible disaster through this early warning system. From the evaluation findings, a positive response from all the target UCs was captured that showed that communities are now well aware about the upcoming natural disasters and prepare themselves and their community accordingly. During an FGD it was propounded:

> *In our village, all people use Bakhabar Kisaan App which helps us in combating natural hazards and disasters like floods. Our people now are well prepared for all the unfortunate situations. We keep ourselves updated through Bakhabar Kisaan App, Radio, TV and intimate our people also. We also get video messages from this app which includes important information. We now grow crops keeping in view the weather updates which we acquire through Bakhabar Kisaan and also through other means like radio/tv (FGD Agricultural workers Male, UC Shaheed Rani)*

Likewise, at Abdullah Shah it was commented:

> *We have been told about told about the usage of Bakhabar Kisaan App. We have also been provided with mobile phones. This app helps us information about upcoming disasters, floods and cyclones through which we make use of different strategies to manage the situation*
>
> *(FGD Agricultural Worker Male – UC Abdullah Shah)*

Similarly, at Nindo, same views were captured;

> *"We can gauge the disasters through mobile application named (BaKhabar Kisan) this application is very helpful we can get updates timely about disasters through this application" (FGD Agricultural Worker Female- UC Nindo)*

A person belonging to ethnic minority also shared that,

"Before this project intervention we were unable to get this information [related to disaster preparedness] timely, even community members did not disseminate that information with us timely" (KII Ethnic Minority Male- UC Shaheed Rani).

The study results found a major fraction of evidences that pointed towards the similar stances which reflect that the project helped the target UCs to have an effective mechanism of early warning and community seems to be well aware with it. The same is confirmed through quantitative data which shows that a large majority of the respondents (78.18%) have used the app for early warnings in case of a disaster (see Figure 53).

Apart from the function of app in terms of early warning component, the project also mobilized *"Youth Groups"* in this regard by sensitizing them about the usage of this app and helped in maintaining the early warning system. The information in this regard has been mentioned as below:

☐ Role of Youth Groups in Early Warning Mechanism:

In order to ensure that relevant information related to future climatic chaos reaches to all the segments of community, the project established youth groups; both for male and female.

In our village, a separate youth group for females works who provides information to women
(FGD youth group Male- Abdullah Shah, Badin).

The findings from the evaluation revealed that youth groups act as a channel of major information dissemination in case of any unfortunate situation. Youth groups sensitize community on disaster mitigation and preparing community to tackle the disasters. These youth groups were provided with phone and were given adequate knowledge on all the components of app including updates about future disasters, techniques for agricultural productivity, crop prevention and livestock maintenance which in turn disseminated to other community members by visiting door to door household. Moreover, the announcement for weather updates also made through announcements in mosques and social gatherings as in some FGDs it was mentioned that,

"We also give information through announcement in mosque's loudspeakers and community meetings"

(FGD Youth Group Male- Abdullah Shah, Badin)

A major bulk of interviews and FGDs from all three intervened UCs indicated towards the proactive approach and efficient role that youth groups uptake especially in the context of early warning mechanism and disaster mitigation and preparedness. In the UC of Abdullah Shah, it was repeatedly mentioned that,

"Our youth group workers are educated boys who aware us in case of emergency and dangers related to climatic change. They use the Bakhabar App and provide us with all the relevant information"

(FGD Agricultural Worker, Male – UC Abdullah Shah).

Similarly, the members of youth group also mentioned that,

"We have now been sensitized about how to prepare ourselves in times of danger"

(FGD Youth Group Female- UC Abdullah Shah).

Youth members have access of mobile phone and they use this application effectively, this component of app give us updates about weather condition and it can update us early, before any disaster.

(FGD Agricultural Worker Male, UC Nindo).

Youth members have access of mobile phone and they use this application effectively, this component of app give us updates about weather condition and it can update us early, before any disaster.

(FGD Agricultural Worker – Female – UC Shaheed Rani)

2. Improved Agricultural Practices through Agricultural Advisory App

Are communities improving agri-practices by using ari advisory app? What is the level of access of app? Who is able to access (gender, disabled, minorities), How efficient is it in resolving issues? How effective are the early warning systems?

Another section of the research questions related to the realm of efficiency was about analyzing if the communities have improved their agricultural practices through the use of agricultural advisory app, the level of access to the app in various contexts like gender, minority and disability. Additionally, the evaluation also tried to extract relevant information on the extent to which this app proved efficient in catering to the agricultural issues of the target area.

Based on majority of the responses emerged from the target UCs, it can be comprehended that community has changed their take on agricultural practices in various forms and resultantly became more knowledgeable. Majority of the participants talked about the impact of this app on their agricultural practices especially related to knowledge on season appropriate crops, pesticides, livestock issues and crop diseases, etc.

In multiple interviews people credited *Bakhbar Kisaan App* in regard to their changed agricultural practices. It majorly equipped them with adequate knowledge related to production and prevention of agriculture and livestock. During an FGD, it was claimed that,

We [farmers] use bakhabar kisaan aap through which we got knowledge about cultivating crops according to the season. So, now we grow our crops according to the seasonal change"
(FGD Agricultural Worker-Female, Nindo, Badin)

Similarly, at another UC the participants were of the view that,

We have downloaded an app by the name Bakhabar Kisaan App, it tells us about solutions to our agricultural problems including information on various crop diseases. We transmit this information to other people of our village also.

(FGD Women Leaders- Abdullah Shah, Badin)

The agricultural workers also opined that:

This application is helpful for us in crop production as if we start harvesting and weather is not good for next few times so we postpone our harvesting, if we don't postpone we will surely face big losses. This app also decreased risks of disaster as we get updates regarding any hazard/disaster so we take precautionary measures.

(FGD Agricultural Worker, Female- Nindo)

Male agriculture workers group shared a similar view;

If we face any issue regarding pesticides or we need any seeds we ask youth members to solve our issue through this application.

(FGD Agricultural Worker Male – Shaheed Rani, Badin).

Some participants also shared that they refer to the Bakhabar kisan app if they face any livestock related issues*;*

*We get information related to livestock animals' diseases through this also. We click the
photos of our sick animals and share it on app. Then we are told about medication and
afterwards treat our animals accordingly.*

(FGD Agricultural worker, Shaheed Rani, Badin).

Concerning to the level of access of phone, a significant uniformity was seen throughout the data emerged from the field. The evaluation findings document that there is no significant digital divide found between men and women in regard to access to phone app. Almost all of the participants shared that both men and women have access to mobile phone. In an FGD, it was stated that,

*In our village, almost all people [men & women] have access to mobiles phone and use the
app as per need. Girls in our community also use mobile phone*

(FGD Youth Group Male- Abdullah Shah, Badin).

The women leaders also shared that,

Women from our community have access to mobile phones and use phone app also.

(FGD Women Leaders- Abdullah Shah, Badin)

 In the context of minorities also, no divide was seen in the access of mobile phone and especially app;

*We have a mobile on which we get updates, and other community also shares information
with us regarding this app [Bakhabar Kisaan app]. This app tells gives us updates in case of
disasters. We also have a whatsapp group which also helps us in disseminating information"*
(KII Ethnic Minority Male, Nindo, Badin).

As evident from a bunch of similar views shared by the participants, it can certainly be said that the mainstreaming of agricultural advisory app (*Bakhabar Kisan aap*) proved considerably efficient as well as effective in resolving different issues of the target communities. Furthermore, all of the participants have adequate access to phones and thereby, are aware how to utilize the relevant information.

3. Project's Contribution to Community Resilience in face of Disasters
How is the Project contributing to the resilience of communities in the face of disasters (floods, locust, and COVID-19)

The study also focused on assessing the contribution of project in the context of preparing communities and building their capacity and raising awareness to combat with disasters including natural disasters and health issues like COVID19.

Community reliance especially amid disasters has discussed at length in the previous sections; the study findings consistently show evidences in terms of enhanced community capacity of both male and female community members to effectively plan and manage disasters. During a recent cyclone threat faced by Badin, the communities showed their preparedness and planning;

*We got to know about expected cyclone however the warning helped us prepare better. We
planned to go to safe places.*
(FGD Agriculture workers Female – UC Shaheed Rani)
Another group of youth mentioned sharing their improved capacity;

*A few weeks ago, a trolley fell down in a ditch full with rainwater. There were a few villagers
standing in that rainwater. As soon as the trolley fell off, a few of our community members,
including both males and females, went down and rescued the people down there.*

(FGD Youth Group Female – UC Abdullah Shah)

Role of VDMCs in Disaster Preparedness

Another important element which ensured resilience was the active participation of VDMCs. In all the target UCs, majority of the participants unanimously talked about the effective role that VDMCs have played in equipping target communities with evacuation strategies particularly through their action plans. VDMCS inform community members about moving to safe places, and disseminated important weather updates on time.

We can now combat disasters and natural hazards. We have VDMC available from which we know that we have to move to safe places. Our people are intimated about upcoming disasters in due time and we are also informed about storing food in case of any emergency (FGD Agricultural Worker Female – UC Abdullah Shah)

Village disaster committee is formed in our village, the responsibilities of this committee are to support people during disaster and all the members of this committee have already shared responsibilities that what they have to do during any disaster, they also have formed action plans for disasters, they give awareness sessions to community for DRR raised floor also (FGD Agricultural Worker Male – UC Nindo)

Moreover, early warning system introduced by project seems to be a key element in preparing the communities. The communities get to know about the impeding issue beforehand thus get sufficient time to plan and prepare to stay safe with all the required amenities. This intervention as reported by respondents has been very helpful for them as prior to this, many of them did not get to know about the expected disaster. The community groups, mobile communication and connectivity at household level ensures that everyone stays updated regardless of ethnicity, religion or gender. The quantitative findings also reflect the same; 97.02% of the respondents reported that they have access to some type communication system that allows information to flow during the emergency. 81.65% of the respondents use mobile phones for such purposes (see Figure 26).

Even though the major focus of the project remained on building the resilience of community towards disaster preparedness and agricultural productivity but additionally, the project also made efforts for raising awareness on the global pandemic. The efforts for sensitizing community about COVID-19 were made in the form of awareness sessions which were conducted with the assistance of community health workers (CHWs), youth groups and women leaders. They gave awareness sessions in community about the necessary precautions for the prevention and control of COVID. The findings from the field showed a mixed response in which almost half of the participants were of the view that despite receiving awareness sessions, the community do no follow SOPs;

*Majority people of our community do not follow Covid SOPs.
(KII Agricultural Workers Female – UC Abdullah Shah).*

Some participants shared that community people still have some misconceptions regarding Covid-19:

People of our community thinks that COVID cannot affect village people as their immunity is very strong (FGD Agricultural Worker Male – UC Abdullah Shah)

The community health workers also shared about the limited implementation of SOPs among people:

Some people who are a bit educated are following Sops. However, there is very less use of masks in markets and homes. People also do not practice social distancing. There is a need to develop more awareness regarding COVID (KII CHW, Badin).

However, there also some participants that were of the view that community people are aware about COVID and also follow SOPs:

Yes, project team always conduct Covid-19 sessions, in this meeting we learnt about safety precautionary measures of Covid-19, that how can we reduce spreading of covid-19. They told us that we should wear mask, keep social distance and we should wash hands again and again (FGD Agricultural Worker Male – UC Nindo)

People do not take corona virus seriously before. But after multiple incidences of deaths due to COVID, people are now taking it seriously to some extent (KII Medical Officer - Badin)

Considering these mixed responses, it seems that even though project is taking measures to ensure awareness raising, the community still has misperceptions about Covid-19. The people who have experienced or closely observed the disease are better aware than those where the disease hasn't reached as yet. The issue is not unexpected in community with low literacy level. A focused strategy on awareness raising along with provision of hygiene kits might prove helpful; also, for dissemination of information on SOPs, community structures like youth groups and the app can be of help for wider level awareness raising.

4. Project's Orientation Towards Balancing Power and Agency Dynamics

To what extent, for Power and Agency, which of the following are changed positively or negatively?
   a) *Self- efficacy, ability to make decisions*
   b) *Control of household resources*
   c) *Women's access to information and technology*
   d) *Women's participation in community groups*
   e) *Women's involvement in community decision-making.*
   f) *Women have leadership roles in the community?*

One of an important group of beneficiaries of the project were women working in the agricultural sector. As the project also focused on gender equality, the evaluation focused on analyzing the situation of women in the context that how the project is primarily contributing towards their empowerment and ensuring women's participation. Another research question addressing the project's contribution in balancing the power and agency structure included different areas like assessing women's control of household resources, self-efficacy and ability to make decisions, women access to information and technology, women's participation in various aspects like community groups and community decision making and assessing if women have leadership roles in the community or not. The evaluation has tried to dig out relevant information on these key research questions which are discussed as below:

☐ Women's Involvement in Community Decision-Making

The participants of Badin from all targeted UCs showed a positive and welcoming approach towards women's involvement in community decision making. The findings from evaluation depict that woman are actively involved in decision making practices at both household and community level; majority of the women are actively taking part in community meetings and community groups. The project also made efforts for effective engagement of women by developing different community structures for women in the form of "Women Leaders" and "Youth Groups."

Both the male and female participants held the same view for women's participation and contribution to decision making. Women from ethnic minority also were heard and their opinions were respected. During an FGD with female farmers it was repeatedly mentioned that,

We all women give advice to our men in different aspects. Our men consult us regarding agricultural matters.
(FGD Agricultural Worker Female- Abdullah Shah, Badin).

The male agricultural workers also had similar stance,

This project has made our women empowered. Women now give us useful suggestions related to agriculture and we also take into account their views and suggestions.
(FGD Agricultural Worker Male- Abdullah Shah, Badin).

A participant belonging to an ethnic minority also shared the situation of women belonging to minorities and commented,

Yes, women also participate in community meetings, they learn new things, and share with other females, even they also talk about issues of ethnic minorities" (KII Ethnic Minority Male, Nindo).

Likewise, the findings have frequent mention of women's contribution to household and agricultural activities alike. Community does not only register but openheartedly acknowledge and appreciate the role of women.

Female are very active, and they also participate in social events, they also have decision making power in our community (FGD Youth Group- Nindo)

Our women work with us equally in the fields and they manage household chores also. We consider the opinions of our women in household decisions.

(FGD Agricultural Worker Male, Shaheed Rani, Badin)

Likewise, the survey data, majority of the respondents (80.95%) stated that women participate in training and drills for early warning and evacuation (see Figure 45) and 92.03% of the respondents reported that women occupy leadership positions in drills that are conducted for early warning and evacuation (see Figure 46). In light of majority of evidences emerged out of field, it is safe to say that the project made a success in terms of ensuring women's inclusion in decision making practices and has contributed much in terms of self-efficacy also.

☐ Control of Household Resources; Women running Businesses Through Alternative Livelihoods:

One of the project's success and efficiency remained in balancing the power and agency dynamics particularly in enabling the women in opting for alternative livelihood options instead of solely relying on agriculture and eventually contributing towards women's empowerment. The participants from all target UCs unanimously expressed their positive experiences of trainings on alternative livelihoods and business management skills and learning adequate knowledge on different businesses through which they make their earning and could improve their financial situation. The project also facilitated women with the relevant logistical support to assist women in establishing their small businesses. During an FGD majority of the participants stated,

In our village, some women are provided with sewing machines through which they earn their livelihood and it also enhances their skills. Some are also facilitated with chickens so that they can practice alternative livelihood.
(FGD Agricultural Worker Female – UC Abdullah Shah)

Increase in monthly income is another important aspect to be mentioned which is indicative of project's success. Interestingly, some participants shared their stories of increase in their income after opting for alternative livelihood options. A woman of a seasonal laborer n shared that,

Before the initiation of our corner shop, my husband usually earned PKR10, 000 per month but when he started the corner shop, our income has doubled and he is now earning up to PKR20,000 (FGD Agricultural Worker Female – UC Shaheed Shaheed Rani)

The male farmers also discussed:

Our village women have been provided with some sewing machines and chickens so that they can adopt alternative livelihoods and make some money for their livelihood. Our women stitch clothes and they earn good money and contribute in their household.

(FGD Agriculture Worker Female – UC Abdullah Shah)

Interestingly, some participants mentioned about GALS (Gender Action Learning System) Training in which women were encouraged to work from their home and support their husbands equally in improving economic situations of their households. Considering to GALS training it was mentioned,

The Gals (Gender Action Learning System) training was very beneficial. We learned that both husband and wife should earn which result in stable economic situation. We learned about opting alternative livelihood and get aware how to save our expenses

(FGD Agricultural Worker Female, UC Nindo)

The cost- effective approach was also implicit in encouraging women to opt for various occupations;

We are now practicing kitchen gardening. We now cultivate our own vegetables and also sell them in our nearby area. We do not purchase vegetables from the market now

(FGD Agricultural Worker Female, Nindo, Badin)

During an FGD at Shaheed Rani too it was propounded,

We received trainings on alternative livelihood in which we get some materials for making soaps and detergents and also get instructions related to the markets where we can sell them.
(FGD Agricultural Worker Female – Shaheed Rani, Badin)

As almost all of the participants shared similar responses, this clearly reflects a success factor of the project in which women are actively engaging in alternative options and running their micro businesses.

☐ Women's Access to Information and Technology

Another research question under efficiency was to examine if women have adequate access to information and technology. The findings from the evaluation in this regard suggest that a considerable fraction of target population of the women have adequate access to information and technology also, it was found that majority of the young girls know all the functions of mobile phones and were actively using agricultural advisory app introduced by the project. However, there were few participants who mentioned that women do not know much about phones and technology for instance, during an FGD it was remarked,

Our women are illiterate and therefore, they do not know the use of mobile phones.

(FGD Agricultural Workers Male- UC Abdullah Shah)

In same UC, there were some contradictory findings as well:

Almost half of the community have access to mobile phone in which women also have phones and they have absolutely no restriction on using mobile phones. We also know the use of Whatsapp and Facebook.

(FGD Youth Group Female – UC Abdullah Shah)

But even though if some women have no mobile phones, owing to project activities, they still get relevant information from other women and from the community groups [*women leaders and youth groups*]. During an FGD it was mentioned,

"Women also have mobile phone access, 6 to 7 women from this village have mobile phone and some of them also use this application, so they also spread information with other females" (FGD Youth Group Male – UC Shaheed Rani).

A stark uniformity in the majority of the participants' responses was seen throughout the data gathered from all target UCs. As an evidence, at Nindo it was stated that,

Mostly women have mobiles here. Females mostly share this information with females, they usually when meet each other exchange information and tell them [women] to share with others also (FGD Youth Group Male UC Nindo).

The women leaders too opined that,

Our community women know about technology as they use mobile phones and also consult Bakhabar Kisaan App.

(FGD Women Leaders-UC Abdullah Shah).

☐ Women's Inclusion in Leadership Roles and Community Groups

A set of research questions in the current evaluation remained on assessing the level of women's participation in community groups and to see to what extent women have leadership roles in the targeted UCs. For equal representation of women, the project developed community groups in the form of women leader and youth groups. These groups proved considerably important particular in terms of information dissemination related to agricultural concerns, livestock problems, disaster preparedness, weather updates and many other relevant aspects. At all UCs, varied categories of all participants repeatedly mentioned about the active engagement of women in community groups of women leaders and youth groups. A women leader (study respondent) while sharing about her experience stated,

Being a women leader, we are actively involved in community decision making.

(KII Women Leaders – UC Nindo)

The role of women leaders was important in managing various community concerns:

The role of women leaders is that they participate in all community meetings. They make efforts for the betterment of women. All people respect the decisions and opinion of women leaders. Through the efforts of women leader, our area has been given a protective barrage/dam

(KII Women Leader- Abdullah Shah, Badin)

It is important to mention that women belonging to ethnic minority also hold important leadership roles and are striving for the getter good of the community. A participant belonging to ethnic minority while discussing about women's participation in community groups proclaimed:

My wife is president of our village community and my sister is general secretary, and participation of women is very useful as they also give information regarding disaster to females of community, and women also give awareness sessions on WASH to other females. My wife also gives awareness to community women about education of female, she always keeps struggle for education of girls.

(KII Ethnic Minority Male – Shaheed Rani, Badin)

Women's wide participation in youth groups remain evident in study findings:

Female youth members help communities in various matters like they provide information on disaster preparedness and weather updates. They visit door to door households and give relevant information.

(FGD Youth group Female- Shaheed Rani, Badin)

Partnerships and Cooperation

To what extent have partnerships been sought and established and synergies been created in the delivery of assistance? How effective were DRR coordination Meetings (District and Sindh Chapters)?

The project design has two key components; one outcome is about the community resilience through enhanced knowledge and capacity while other outcome is focused on the enhanced capacity, commitment and accountability of governance. In order to achieve these results, it is important to build synergy in both components through collaboration, coordination and effective communication. For this, the study gathered information reflect that there are efforts made to make the community aware about the line departments, their roles and responsibilities and also to establish communication and coordination mechanisms among various stakeholders.

> *The project team is in communication with us through email and through letters. We have a disaster reduction form in Badin which hold periodic (monthly and/or quarterly) meetings. We also have a whatsapp group for smooth communication and coordination.*
>
> *(KII DDMA Representative, Deputy Director Agriculture Department)*

The findings also show that departments do have contingency plans in place which are updated periodically in light of the local needs. Likewise, it is shared by departments that they have reviewed the DRR plan developed by project and shared their feedback to staff. The findings from field also confirmed coordination among various stakeholders:

> *UDMCs has developed disaster risk management plans which are linked with relevant government departments. Our community organization/UDMCs responded in situation of heavy rains for execution irrigation channels, UDMCs are disseminating awareness to build disaster resilient houses, safe evacuation places are identified by UDMCs, and UDMCs are linked with other NGOs working at district level. UDMCs have responded to fire incident in adjacent village of UC Nindo with support of NGOs and government through DRR forum meeting, immediate needs catered by providing Food and NFI items to effected families. We organize coordination meetings on monthly and quarterly basis. Overall coordination has brought positive support.*
>
> *(KII – Implementing project staff representative)*

As per project documents review, it seems that project design has much more interventions planned with government stakeholders which expectedly will bring synergy in the DRR action plans at all levels however, it is equally important to ensure that community has certain trust in these departments as well as the communities have confidence that in case required, they can reach out to departments and their issues shall be resolved. A large majority of the respondents (88.82%) also confirmed that the community works with government authorities (DDMA/PDMA/SWD/livestock department) and NGOs for disaster management see Figure 48), 86.47% of the respondents agreed that district authorities usually take up their issues and provide support (see Figure 50). The commitment has to come from government departments through some concrete steps which may help in ensuring accountability as well as strengthened systems for governance and its alignment with local needs and capacity. The project beneficiaries, especially youth group members, also confirmed that they are put in touch with all the line departments and they have knowledge and information on which department to reach for a particular problem.

> *We are aware of the relevant departments and their duties. We have the relevant contact details so that if required we can get in touch with them.*
>
> *(FGD Youth group male- UC Nindo)*

However, there seems to be a general lack of trust in government. Especially, agriculture workers, in few instances, showed their reservation in sorting cooperation and support from departments. They did express the challenges that are faced while coordinating with departments as,

*We did try reaching out to line department and discussed our issue with them. The officials
listened to us but as usual they did not do anything to resolve the matter.*

(FGD Agriculture workers Male, UC Shaheed Rani)

Also, the study findings show that project made considerable efforts to introduce alternative livelihood means to vulnerable groups; for this skill-based training and seed-money for raw material has been provided to the beneficiaries along. The initiative seems promising and study respondents show satisfaction towards the initiative. It is however depicted through the feedback of the beneficiaries of initiative that they did business as a result of the activity however they struggle to invest in the business as they don't have enough financial resources. The study respondents do know of the microfinance institutes; some of them receive money from BISP and Ehsas programs as well however there is a clear reluctance at their end to take interest-based loan. People either fear or dislike the interest thus are not very keen on taking loans from MFIs.

In this regard, market linkages need to be created with the community groups; also, there is a need to connect community groups with MFI in a more formalized manner. Either a lower interest rate or interest free loan might be of help to be linked to the vulnerable groups so that they can take these loans as seed money to initiate business. Until and unless such partnership or cooperation will be made, it might become challenging for the community members to utilize these skills for businesses thus the invested resources in capacity building might go futile.

Effectiveness

This section presents information related to the theme of effectiveness which is a key element of DAC criterion. Major key questions explored under this theme includes assessment of the effectiveness of village level committees and to investigate if they posed any impact on the resilience of communities. Furthermore, the evaluation also remained focused on extracting relevant information on the achievement of stated outcomes and objectives as stated in the project document. Following are the details on the key research questions explored under the area of effectiveness:

1. **Village Level Leadership; Impact on Community Resilience**
   How effective is village level leadership? Is there a positive impact on resilience of communities?

One of the project's success can be contributed to the activation, development and sensitization of VDMCs (Village Disaster Management Committees). In all three UCs, majority of the participants mentioned about the proactive role that VDMCs are playing in terms of community resilience. Majority of the participants talked about their experiences of climatic emergencies in which they shared that these village level committees provide guidance on weather updates and equip community people with essential coping strategies to combat unexpected natural hazards. Clearly, majority of evidences were inclined towards a similar stance reflecting an optimistic view on village level leadership. During an FGD, it was shared,

*We have VDMC working in our area that gives us enough knowledge on disaster
preparedness. We have now learned how to behave during an emergency. Our village people
rely on self-help instead of relying on government help.*

(FGD Youth Group Female – UC Abdullah Shah)

Additionally, as person with disabilities are more vulnerable to the implications of climatic change and disaster, the VDMCs ensure the safety of PWDs on their priority. A significant number of the respondents (90.53%) agreed that persons with disabilities have roughly the same access to community service like others in the community (see Figure 42), 55.21% of the respondents stated that there are wells and aid distribution points for persons with disabilities (see Figure 30).

*VDMC structure exists in village whose main feature is to provide protection to vulnerable
people like women, children and person with disability.*

(KII Person with disabilities, Female- UC Abdullah Shah)

At Nindo and Shaheed Rani too, the effectiveness of VDMCs were evident from the responses of majority of the participants:

There is VDMC available in our village that gives awareness on DRR, they are responsible for the support of community people in disaster, they also conduct meeting regarding emergency times, that how we can combat disasters, and they also support everyone in critical times
(FGD Agricultural Worker Male – UC Nindo)

Similarly, at Shaheed Rani it was stated:

Our VDMCs have DRR future plans in place through which they sensitize community about how to deal with natural calamities. Our VDMC is actively working for the betterment of our community.

(KII Agriculture Worker Female – UC Shaheed Rani)

Similar findings are confirmed from survey data. A significant percentage of the respondents in Badin (93.57%) mentioned that village committees do exist for disaster risk reduction while remaining 6.43% of the respondents partially agreed. *Badin is categorized as "very high" on the community structure for DRR indicator of community capacity with a score of 0.97 (see Figure 11).* Of those who responded that community led structures function effectively, 37.15% reported there are effective village committees in place, 36.46% reported that the DRR committee works effectively, 12.85% responded that there is an effective resilience academy in the community while 6.6% and 5.9% responded that there is a union council and water management committee respectively (see Figure 13). A vast majority of the respondents (93.57%) also reported that they are alerted with sufficient time in advance of risks by the community organization (see Figure 16). Thereby, it can be comprehended that village level leadership proved effective in terms of making Badin a resilient community, with 88.69% of the respondents agreeing that community leaders help the community in effectively planning and deciding for disaster preparedness (see Figure 22)

2. Achievement of Planned Objectives and Outcomes
Are the planned objectives and outcomes in the project document achieved?

As already mentioned in section of relevance, the evaluation findings suggest that as far as the achievement of stated outcomes and objectives are concerned; project proved significantly fruitful in the attainment of its planned objectives particular in the context of community resilience by building knowledge and understanding of target UCs towards disaster mitigation and preparedness. In all target UCs, the resilience of communities was evident from the way in which participants proclaimed about their positive experiences related to project interventions. After project implementation, the element of self- efficacy is explicit in the practices that people of Badin are now implementing in their farming and response to unfortunate disasters and climate change.

The project offered varied trainings and awareness sessions addressing the issues that are faced by communities as result of climate change; these include varied agriculture problems as well as recurrence of climate induced disasters. The project conducted trainings and disseminated important information around the mentioned issues which needed required awareness and skill building. The major trainings conducted under the project were related to climate smart agricultural practices, the use of agricultural advisory app [*Bakhabar Kisaan App*] for establishing early warning system, sessions on alternative livelihood and business management/negotiation skills. Majority of the participants from all the target UCs held a similar view indicating that project posed a positive impact on their agricultural practices and disaster mitigation.

We had limited knowledge on agricultural practices before the trainings. After the trainings, our knowledge related to farming and agriculture has been increased.
(FGD Women Leaders- UC Nindo)

Interestingly, almost all participants shared their experiences related to their use of hybrid fertilizers and seeds which they were using in their fields before the project implementation. After project implementation, people of Badin have abandoned the use of hybrid fertilizers, replaced it with organic fertilizers which they are making at household level. This strategy apart from being useful in their farming also proved cost-effective from the economic perspective.

> *After this project, we do not use hybrid seeds and harmful fertilizers. We have been educated on making organic fertilizers. We now also know about how exact amount of water required or a specific field through which our chances of loss has been decreased.*
> *(FGD Agriculture Workers, Female –UC Abdullah Shah).*

Likewise, similar responses were emerged at Shaheed Rani:

> *Our knowledge related to agricultural development has been increased. Previously, we did not cultivate crops according to seasons but now we know which crops are suitable to cultivate in particular seasons (FGD Agricultural Worker Male – UC Shaheed Rani)*

Considering the project progress around building capacity and skill set of community of Badin to manage disaster risk through planning and preparation and to have improved and climate smart agricultural practices, the study findings clearly reflect that the project is on its way to achieving outcomes and objectives. A large majority of the respondents (97.62%) reported that they have knowledge and information on modern climate smart practices (see Figure 55). Majority of the respondents (97.62%) also reported to have knowledge and information on modern climate smart practices (see Figure 55).

While the other key outcome is related to governance, its capacity building, commitment and accountability. The study findings reflect that initiatives are taken and efforts are made towards improved coordination and communication through disaster reduction forum and enhanced capacity of staff, however possibly the project has still the execute the initiatives related to institutionalizing the planning and preparing using the lens of community capacity and aligning the mitigation plans as per the needs. In addition, though the staff has been trained and study findings have evidences that show that staff is trained and are having an improved coordination system however their transfers is a key challenge faced by the project. Moreover, it is important to establish mechanism beyond creating linkages between community and line departments to ensure accountability.

> *In addition to building capacity of community, it is equally important to take commitment from government departments to ensure their support to local communities during disaster. Their accountability is as important.*
>
> *(KII President UDMC)*

Though study findings do not show any concrete evidence relating to ensuring commitment from departments and ensuring accountability which is expected to be done in the latter half of project life. Nevertheless, the stakeholders did show their updated knowledge relating to early warning systems, enhanced community capacity and other project initiatives which is representative of the strengthened coordination with the government stakeholders.

> *I have read Project's DRR plan and have provided them my feedback and inputs. We have developed district's contingency plan and have tried to link it up with project's DRR plan.*
>
> *(KII – DDMA Representative, Deputy Director Social Welfare Department)*

The project staff however is positive about the expected change; their feedback is hopeful about the changing practices. It was mentioned;

There was a general trend that government is not functional and not supporting communities due to lack of coordination and linkages of government and communities but now trend has been changed that coordination with government brings support and assistance for betterment of communities.
There was challenge that officials of government changed rapidly due to their transfers and other issues therefore we faced challenges.

(KII – Implementing project staff representative)

Impact

What are the results achieved beyond the log-frame?

Given that the study is mid line assessment where project is still on way of implementing its interventions and achieving its objectives and outcomes, it seems too soon to claim achievement of unintended outcomes. However, the study findings are reflective of some outstanding results which are already visible in the community as well as evident through the findings. One such element is of inclusivity which is discussed earlier as well under Relevance section. Quantitative findings depict that a signification number of respondents (92.81%) are of the opinion that vulnerable groups in the community (minorities, PWDs and trans genders) are included and represented in the community decision making on DRR, CSA and recovery (see Figure 44). Though the project design ensures inclusivity yet the general outlook of community, as is shown through qualitative findings, is nowhere documented in results explicitly.

> *Persons with disability and minorities got benefited from this project. They participated in almost all kind of initiatives. Many PWDs got a chance of alternate livelihood which helped them becoming financially independent through initial financial support… In this project women and minorities are provided with opportunities to participate equally. Hindus also participated in activities and got opportunity to learn and grow. I feel that the project opened gateway for the locals including vulnerable groups to progress via opening means of financial independence through alternate livelihood means and skills.*
>
> *(KII President UDMC)*

The respondents, other than the vulnerable groups, showed an openness towards participation of these groups in planning and decision-making process. Across all respondent groups, no single response showed any reluctance or hatred and resistance towards minorities, persons with disabilities and women. The communities seem sensitized about the concept and it shows that they are well aware of the fact that every group has a right to share and express opinion and to be part of decision making.

In addition, the concept of women empowerment seems very evident. Women has reach to information and technology but beyond that, people are appreciative of the initiatives like alternate livelihood means for women helping to make them financial stable and independent. Both male and female respondents unequivocally shared that women openly and comfortably contribute and participate in community discussions for planning and executing initiatives. They feel like an important and integral part of the local community and feel responsibility towards the development of the community.

Working together and Saving Lives

Some days ago, a trolley loaded with bamboos and wood slipped in a ditch because of rain and slippery road. There were a few community men and women standing in that ditch for some labor. On seeing that trolley going into the ditch, some young women and men quickly ran for their rescue. After half hour's struggle and efforts and with strategic planning of going down and saving lives, all of the persons in ditch along with trolley driver and staff were saved. This was all possible because of the DRR training that we received under the project. We learnt through this training that both women and men need to work jointly in order for mutual benefits and survival.

FGD Female Youth Group, UC Nindo

> *We [women] are working in the form of youth group in our area. We are working for the betterment of our village. We sensitize and educate people of our area by giving them information regarding agriculture and disaster preparedness. Whatever we learn from the training we disseminate this knowledge to our community people*
>
> *(FGD Youth Group Female – UC Abdullah Shah)*

Sustainability

How will project strengthen and sustain its impact during the remaining period?

Considering the project objectives and results, the sustainability factor is largely dependent on capacity building of both community and government stakeholders, enhanced community capacity through community led structures, awareness of role of various line departments and coordination of community with government through some forum and sensitization at community level regarding their own roles and responsibilities.

☐   Improved knowledge and capacity:

The study findings clearly reflect that project, as per plan, is attaining its outputs; there had been a few challenges of which Covid-19 was a major one however the project continued to build community and government stakeholders' capacity through various measures which seems quite promising in ensuring sustainability of the project. It is, however, important to mention that more than capacity, the element of co-ordination seemed to be quite dominant as far as the role of provincial and district government is concerned. In almost all stakeholder interviews, the participants unanimously talked about project's contribution and appreciated various aspects like DRR forum, development of VDMCs, resilience academy, coordination meetings, DRR management plans and provision of crop calendars. All of these aspects were integrated into already existing strategies and plans of district and provincial agricultural departments shifting specific focus towards the area of Badin. This integration factor is indicating towards the sustainability of the project in one way as state actors are also on board now and are imparting information to the target communities as well. With continued involvement of district and provincial stakeholders, the project can further leave its mark. One of the key informants who was working as a deputy director in agricultural department shared that,

"The DRR management plan of this project has been shared with me. I shared my feedback with HANDS team after reviewing their plan. All activities conducted under this project is contributing in the achievement of Badin Disaster Authority objectives. This project has proved helpful for the government." (KII DDMA Representative, Badin).

Likewise, another stakeholder proclaimed:

A crop calendar has been provided to the agricultural department through this project. The agricultural department is also giving awareness to people in light of that crop calendar. This project is facilitating government. At village level, disaster management committee has been developed which is also in contact with us. We have also access to community volunteers (KII DDMA/PDMA- Deputy Director SWD, Badin)

Also, as per the survey data, majority of the respondents (78.11%) stated estimations of expected losses from floods, droughts, and locust attacks are shared by village committees (see Figure 20).

At larger level, majority of respondents of study showed their increased capacity which had been reflected during a recent plausible calamity. Recently Badin district was at high alert for the cyclone (Tauktae) and the coastal areas were evacuated. The enhanced capacity of the target beneficiaries was reflective in the findings through there preparedness and planning for relocation to safe place(s). This recent episode speaks volumes about the community that is on way to be more resilient and self-sufficient to plan and manage issues related to natural disaster and climate change.

Recently, we got information on the threatening situation of cyclone and we were informed through the BKK app; on getting this information we planned and relocated to a safer place. (FGD – Women Leaders, UC Shaheed Rani)

A few days ago, there was high risk and probability of cyclone in our area. However, we were well prepared for it and we had plan in hand on how and where to relocate in case of danger. (FGD- Female Youth Group, UC Abdullah Shah)

□ Resilience academy and Disaster forum:

In addition to this, the project established different community led structures as well as forum of stakeholders to share information at regular intervals and for smooth and more effective coordination and communication. All the stakeholders that were reached for information gathering acknowledged the contribution and mentioned of the disaster forum as an effective strategy.

The forum and resilience academy seem to be an effective step towards ensuring sustainability and achieving impact in long run however it is imperative that after project exit, the line departments take ownership of these initiatives and further take it forward from here. From survey, a large majority of the respondents (70.41%) reported that they seek guidance from the resilience academy. _Badin is categorized as "high" with a score of 0.70 on the indicator of resilience building institute in the community of connectedness index_ (see Figure 54). The same had been confirmed in qualitative data where the stakeholder mentioned that

> *In resilience academy, officials from various departments are trained who further disseminate the information to local community members.*
> *(KII, DDMA representative; Deputy department Social Welfare department)*

Another one mentioned the same as:

> *Under this project, the officers were supported with capacity building exercises; all these trained officials are now part of resilience academy. On all platforms, we disseminate the information related to natural hazards and other climate related issues.*
> *(KII, DDMA/PDMA Representative; Deputy Department Agriculture dept.)*

From surveys, a large majority of the respondents (70.41%) also reported that they seek guidance from the resilience academy. _Badin is categorized as "high" with a score of 0.70 on the indicator of resilience building institute in the community of connectedness index_ (see Figure 54).

However, it is important that findings did not show any footsteps leading to the concrete measures of institutionalization in this regard. The staff got training and community has enhanced knowledge and skills however there needs to be a mechanism that may help to sustain this change at both department and community level. For this knowledge management of lessons learnt, best practices and skill may help in sustaining change. Also, it is important that at both community and department level there is a sense of ownership of the new platforms and systems that are introduced or strengthened through project initiatives.

> *In this project, Disaster forum is established which involves representatives of organizations and departments working in Badin. The forum is very useful; our UDMC also participate in its meetings regularly. The forum helped in coordination and smooth communication among all stakeholders.*
>
> *(KII President UDMC)*

> *This project facilitated training on DRR for government officials; all the trained officials are now part of Resilience academy. We disseminate all sort of information related to natural calamities and climate change.*
>
> *(KII - DDMA Representative)*

□ Community led structures:

Likewise, another aspect through which project seems to ensure sustainability is establishment of community groups comprising of various community segments. These VDMC and UDMC structures, youth groups and women leaders with participation of vulnerable population seems promising as the participants are getting trained on different

needs of community ranging from agricultural practices to disaster planning and management, coordination with stakeholders, alternate livelihoods and initiatives like kitchen gardening etc. The findings depict that community is well equipped and are mindful of their issues and possible solutions. Community groups have platforms to discuss their issues and make decisions through participatory approach to plan and come out of certain threatening situations. These community structures can be sustained for longer run if they are being involved in other local development initiatives for which creating linkages with other projects and organizations can be of help. Community structures when work for longer run can show better functioning and achieve results.

This project has done a really good job relating to the risk reduction and management of natural disaster and impact of climate change. The local community has now enhanced knowledge around a number of issues resulting from the climate change and disasters. People living on coastal area especially farmers and even fishermen have befitted from the project initiatives.

(KII – Deputy Director Social Welfare, DDMA Focal Person)

We are now trained on climate smart practices. Also, we stay well informed through early warning system and BKK also keep us update don various agriculture related concerns. We keep everyone in community informed about all the updates; even if someone doesn't have a mobile, we ensure that the information reach them.

(FGD Youth Group Female – Abdullah Shah)

Evaluation Matrix & Rating

Criterion	Rating					Rationale
	1	2	3	4	5	
Relevance					■	As the findings and analysis depict, the project is harmoniously designed with the local needs; almost all the interventions are closely in line and relevant to the local issues which needed to be addressed for community resilience. The dark green color highlights the fact that this aspect has hardly any issues however periodic review of data and information will help project to stay aligned with needs by learning through experiences and lessons learnt during execution. • Badin, as a coastal area with high risk of natural and environmental hazards face frequent and serious issues resulting in major livelihood and survival issues. The project directly addressed the problems by offering support, in various ways, to build resilience through targeting the root causes and offering local solutions. • The project directly addresses the local problems of the community ranging from poor agricultural practices (skill building), access and understanding of modern technology (BKK and capacity building on new techniques), access to information (BKK, Early Warning System, community capacity through local structures), natural hazards (prepared and planning, community structures), lack of opportunities (AL, Kitchen gardening) etc. • The project helped community to build on social capital and community capacity by bringing them closer through local structures, sensitization for needs and issues by vulnerable groups, ensuring gender equity, brining women at front by providing them need based training and opportunities. People now have platform to get together, share information, discuss issues for problem solving collectively. The element of trust and confidence and trust has been inculcated which as per findings was not there before project initiation.
Efficiency					■	Efficiency remained a major aspect of the study. The findings, around the relevant research questions, highlight that project is doing very well around the respective areas thus is awarded with dark green color. • Much of the success of local activities was due to the fact that they built upon local needs, vulnerabilities, as well as perceptions and that a community approach to climate risks works when working jointly on measures leading to climate change adaptation while sustaining livelihoods. Early warning system, knowledge of modern farming techniques, updated information on agriculture through BKK app and improved knowledge on agricultural crops and farming helped the community to have improved yield and income. • All the community groups are involved in the design in various roles offering different capacity building opportunities suiting to their needs and local context. E.g. Youth taking lead on BKK, Vulnerable groups for AL, Agricultural workers for trainings and techniques related to farming etc. • Vulnerable groups are provided with a chance to share their opinion, concerns and plausible solutions to problems faced locally. Their voices are heard and they contribute to the local decision-making process. Women, especially, were provided with leadership roles, involved in community structures for contribution to decision making and for improved access and control over resources including access to information and technology. In addition, women are provided with opportunities of alternative livelihood that aim to provide them financial stability and power and control over resources at household level. • Local issues and needs are addressed at micro level catering to the needs. This helped ensuring ownership at community level as they feel their problems are resolving and they have control over their situation through the newly learnt skills and technologies.
Partnership & Cooperation			■			The element of partnership and cooperation with relevant stakeholders has also been sought through the study. The findings and document review reflect that a key aspect of capacity building of these stakeholders is yet to be done. However, the synergies are underway through regular meetings and coordination with DRR forum. The yellow color highlights that: • There is regular communication and coordination with line departments. The relevant personnel have knowledge of project initiatives and they are provided with a platform for coordination and updates. As an initial step towards partnership, the findings do reflect a sense of cooperation and openness at their end. • Also, the community is aware of the role and responsibilities of line department; they have information on the respective contact details so that in case required the community can directly reach the authorities for support. • Improved capacity and strengthened systems of the line departments might further help in enhanced support to communities in terms of early warning systems, disaster preparedness and planning and provision of commodities and other support as needed.

Effectiveness						Effectiveness included community leadership and achievement of outcomes against objectives; the study findings reflect that this aspect of study is quite strong thus assigned with <mark>dark green</mark> rating.
						• Community, with formal local structures have been provided with platform where they can collectively sit together, discuss the problems and share opinions without any discrimination. Women, minorities, youth and elders and persons with disability, everyone gets a chance to discuss and provide opinion. The community has started taking ownership of their issues and are leading their lives taking responsibility of the actions and decisions they make.
						• Project results are in progress; the outcomes achieved so far are concrete and show results that may bring sustainable change in the long run. The project is in the middle of implementation however the change can be felt and seen in community's practices, perceptions and improved knowledge.
Impact						The project is mid-way; the study identified many promising practices and initiatives that need strengthening (and continuation) in order to ensure impact. The <mark>yellow color</mark> highlights that at this point the interventions' impact can go either way however it is dependent on ensuring taking correct measures to help achieve impact.
						• Alternative Livelihoods (AL) is one key initiative that, if realigned, and adjusted with local needs ensuring access and availability of resources, can prove helpful in improving livelihood quality and ensuring impact.
						• Community does know about the MFI offering loans however a major fraction shared reservation regarding loan schemes as it involves interest which is a key hindrance to access loan by communities. In such case where the community is hesitant taking loan, the linkage with MFI wont be of help thus limiting the project impact in some ways.
						• Likewise, BKK app is producing very positive results towards improved agriculture practices, early warning system, market updates etc. This however needs a sustainable measure so that it keeps providing the updates to local community catering to local needs. A strengthened linkage of community with their call centers will help both parties to bridge the communication and ensure continued utilization of BKK app.
						• Water shortage is a major problem faced by Badin. Local irrigation system has bottlenecks which need to be resolved. Though project, as one of the interventions, built community capacity in using agricultural methods and cultivating the crops that require less use of water, is proving helpful. However, a local back-up of water reservoirs may be self-help initiative which if provided to community can resolve local issues and bring a sustained impact.
						• Community led structures, women empowerment and inclusivity in general is one key result brought by project. The sense of ownership among all groups, sensitization towards each other's' needs and mutual trust is identified is one key aspect that will have long lasting impact even after project's phasing out.
						• The DRR forums and local authorities are found to be on way of improved planning and are showing cooperation with local structures. It is important for a long-lasting impact that local authorities are provided with capacity building opportunities along with improved systems and processes for institutional strengthening thus ensuring change at a larger level
Sustainability						The aspect of sustainability is underway thus is assigned with <mark>light green</mark> color. The initiatives are on it way to sustainability provided some concrete measures will be taken; such initiatives may include commitment from line departments, strengthening of community structures and development of knowledge resources. A few steps that are most promising and are showing promising results for sustainability include:
						• Change in practices and improved knowledge among community relating to disaster management, smart farming techniques and updated knowledge on weather forecast and agricultural related matters.
						• Community has been provided with a platform where they get together and mutual discuss issues for future planning and preparation to combat with the issue faced. There is a sense of trust and inclusion which is acknowledged across board
						• Government department officials are trained and have started disseminating information at various platforms. People also have knowledge of line departments and relevant roles to access them when required.

Table 3: Evaluation Matrix & Rating

6. Gauging Community Resilience through Resilience Radar Methodology:[5]

The section presents a synthesis of project mid-term evaluation through the lens of Resilience Radar Methodology (RRM) for assessing the resilience of 60 villages in Badin, Pakistan post interventions by Oxfam GB. A comparative analysis of the findings has been conducted with Thatta, that acted as a control group, to see how successfully project interventions brought the treated community, Badin, on the road to building resilience.

1.   Rationale for Selecting Thatta as a Baseline of Badin:

As part of midline assessment of project, one of the key objectives of the study was to collect information from a neighboring district on radar methodology. The information collected provide a comparative information as control group against the treatment to provide a baseline for Badin data in a more comprehensive manner in

In order to serve these purposes, it was important to select a district with conditions. As shown in map, Thatta is located next to Badin having sa Badin. In the Sindh coastal region, Thatta and Badin are two major disaste droughts and floods follow each other often in quick succession in both exacerbated by socio-economic constraints. The intervening respite is n negatively impacted access to food, water and have led to the depletion of livelihoods. Vulnerability of poor communities particularly in rural a because of the effects of climate change.

Over the period of last 15 years, Badin and Thatta have been facing simila salinity have made the land uncultivable. With changing rainfall patterns, humidity has increased in the atmosphere. Around 3.5 million acres of la Thatta and Badin districts, have already vanished due to sea erosion.[9] As a consequence, livelihoods patterns have changed, since the main occupations of agriculture and livestock rearing have been severely

Figure 9: Map of Sindh

affected by the climate. There has been a decline in agriculture and fish stocks. Furthermore, unsustainable fishing practices adopted by the community have severely affected the livelihoods of fishermen and women.[10]

A recent study[11] of disaster-prone areas in Sindh has also highlighted the vulnerability of the region and its people stating that *"overall the survey households and communities were found to be highly vulnerable with very limited adaptive capacity"* in the four districts including Badin and Thatta. The report further underlines that quantity and quality of food available to families has reduced due to extreme weather events like untimely rains and extreme winters leading to disproportionate impact on women's share of food nutrition. [12]

Based on the above-mentioned facts and similar geographic location, socio-economic and climate challenges faced by the two districts of Badin and Thatta, Thatta has been chosen for a comparative analysis with Badin in order to establish a baseline.
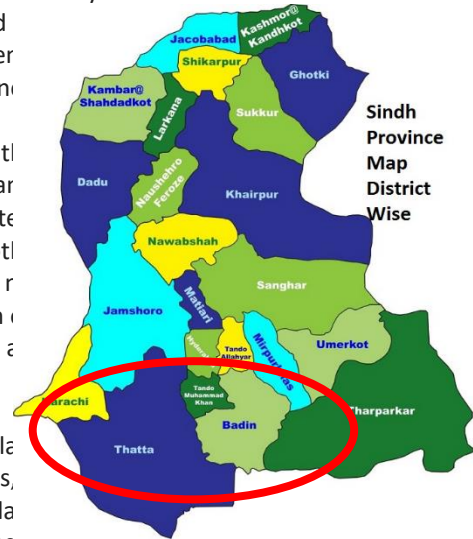
[5] Resilience Radar User Manual: a practical tool to measure community resilience. 2017. Banyaneer.
[6] https://www.dawn.com/news/656700/agriculture-and-technology-devastating-badin-deluge
[7] https://www.dawn.com/news/656700/agriculture-and-technology-devastating-badin-deluge
[8] https://www.iucn.org/es/node/26783
[9] https://www.dawn.com/news/1526863
[10] https://www.iucn.org/es/node/26783
[11] Gender and Social Vulnerability to Climate Change.Social Policy and Development Centre. 2015.
[12] https://www.downtoearth.org.in/news/climate-change/may-2021-was-the-sixth-warmest-may-on-record-says-noaa-77463

2.   Dimensions of Resilience Radar Methodology:

The following four indices of Resilience Radar Methodology (Figure 9) have been measured through an extensive list of indicators as commissioned by Oxfam GB for the communities of Badin and Thatta. These indices measure the resilience of a community or underlying processes to specific shocks and stresses, in terms of its capacity to deal with these shocks and stresses, and in terms of how it responds to them: bounces back better, to previous state, worse or not at all.

Community Capacity
General community capacity includes aspects such as leadership and effective organization.

Social Capital
Social capital includes intangible cognitive aspects that help shape collective efforts for community progress or recovery after a disaster

Resilience Radar Methodology

Inclusiveness
Inclusion of all segments of the community including persons with disability and the roles of men and women in public life

Connectedness
Assesses the connectedness of communities with government agencies, groups, associations, and companies

Figure 10: Indices of Resilience Radar Methodology

The *community capacity block comprises of 28 questions*, *social capital block of 10 questions*, *inclusiveness block of 11 questions,* and *connectedness block of 15 questions.* For an in-depth analysis, questions from ARC-D Toolkit have also been included for presenting an overarching picture.

3.   Analysis Framework:

For the purpose of analysis, the responses of indicators under each of the above-mentioned blocks have been assigned ascriptor values for each option. The highest level of positive statement has been assigned the value of (1.0) while the lowest level of agreement has the value (0.0). All other options have ascriptor values with intervals between the minimum value (0.0) and the maximum (1.0). For calculating score of a particular indicator, the percentage for each option is multiplied with the ascriptor value. As a next step, the overall score of an index is calculated by taking the average of resulting values from all indicators under each dimension. Resultantly, the overall score of the given index of resilience radar lies in the range of 0.0 to 1.00. The closer the value to 1.00, the more resilient is the community through that particular dimension. The score of each index has been interpreted according to the key given below.

Color ring	Index Score	Interpretation for Resilience
	0.81 - 1.00	very high
	0.61 - 0.80	high
	0.41 - 0.60	medium
	0.21- 0.40	Low
	0.00 - 0.20	very low

The four dimensions listed so far - community capacity, social capital, inclusiveness and connectedness - all matter to the resilience of communities and are treated as **'cross-cutting issues.'**

4. Findings & Analysis:

The radar methodology though consists of ten key elements (including **Community Capacity, Social Capital, Inclusiveness, Linkages**, Shelter, Livelihoods, Natural resources management, Health and Water and Sanitation) however for this study, data around four of these (highlighted) is collected. The data on each of these elements is shared separately with sub-indicators in the following sections. The detailed findings simultaneously share the data of both districts however it is pertinent to mention that the comparison explain Badin situation as of now (after an intervention) thus depicting a change as compared to Thatta where there is no targeted intervention is initiated thus reflected as a baseline information. A brief snapshot of these are summarized below to have an overall picture of data highlights.

4.1 Findings from Badin:

Overall findings suggest that Badin has fared to be quite a resilient community as gauged by the four indices of the resilience radar. Badin is categorized as "very high" on the resilience score card with very high scores on community capacity (0.83), social capital (0.95), inclusivity (0.84) and connectedness index (0.86). Post interventions, community in Badin has established strong village structures for community organization and planning to deal with public matters efficiently through effective leadership, successful mobilization of resources, and adaptation of skills. Trust and mutual support have found to be characteristic in moving towards resilience through building strong social capital in the community. The inclusion of all segments of the community including women and persons with disability in community meetings, planning, decisions on disaster risk reduction and adoption of climate smart practices and recovery have paved the way for further enhancing resilience of the community. Moreover, the community is well-connected with district authorities and external actors and is well-supported in the time of crisis.
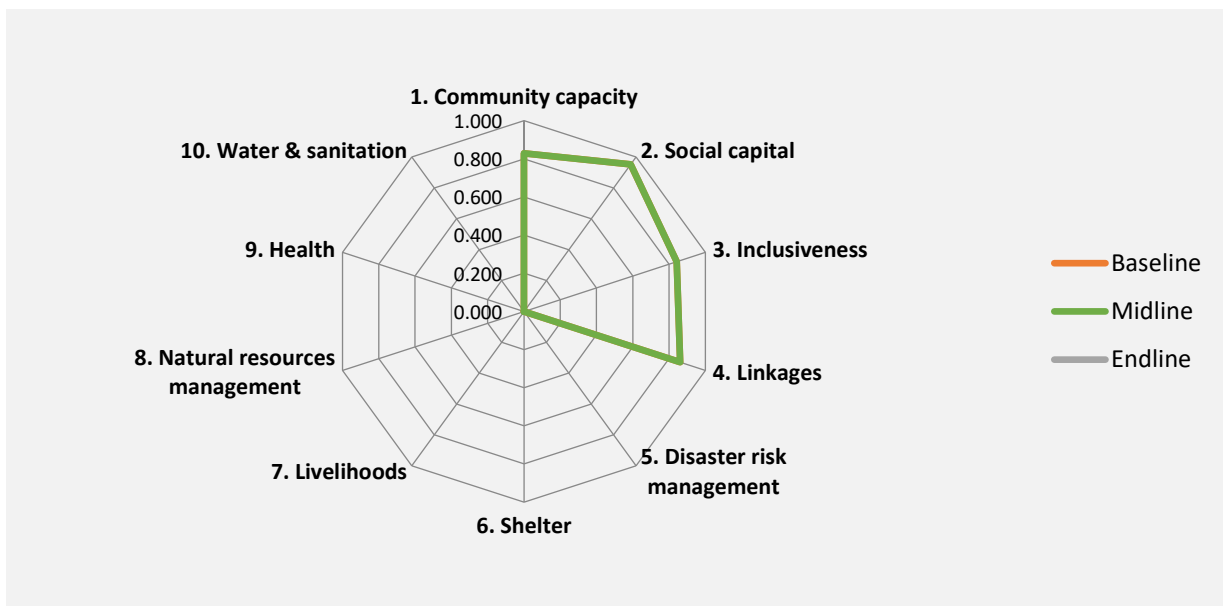
Figure 11: Findings from Badin

4.2 Findings from Thatta:

Thatta on the other hand, in the absence of the interventions, does not rank well on the resilience score card. The community ranks low on community capacity index with a score of 0.30, and very low on connectedness index with a score of 0.17. The community however fares better on social capital (0.59) and inclusivity index (0.42) with a categorization of medium on the resilience score card. This depicts that already existent high trust, mutual support and inclusivity in the community can be built on for enhancing community capacity and consequently resilience.
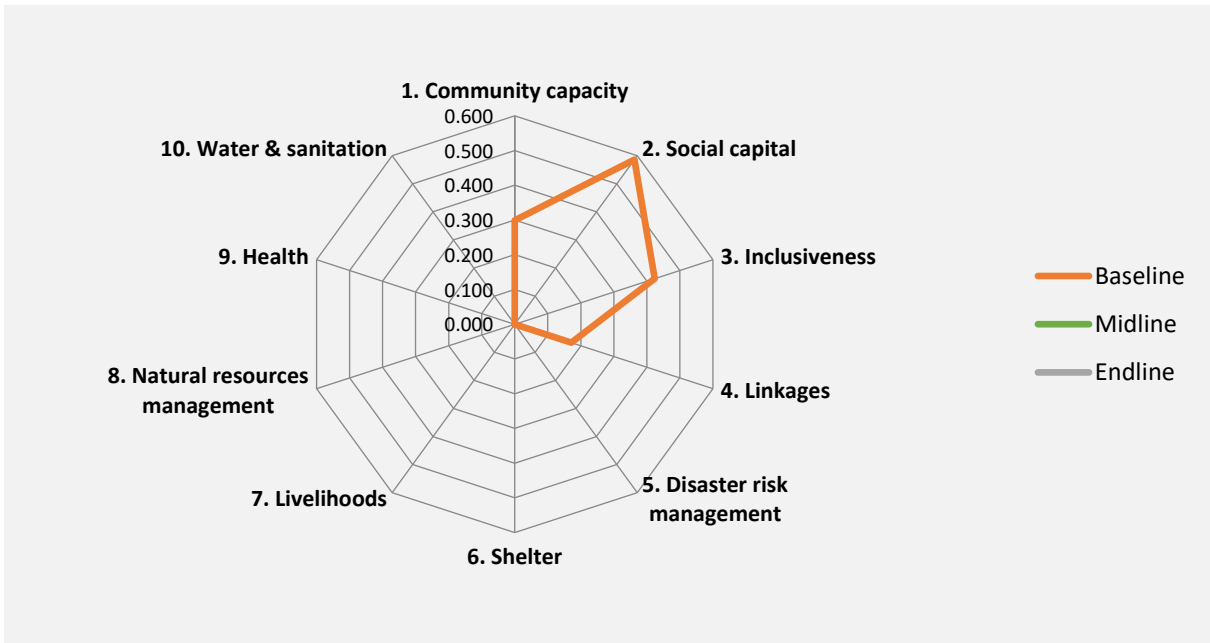
Figure 12: Findings from Thatta

5.   Finding Details on Badin & Thatta:

This section deals with all the aspects and relevant indicators covered for the Radar Method section in survey. Each aspect is defined along with data sets from both districts. An overall scoring has been tabulated along with the descriptive analysis for each separately is added in matrix along with rating for each one of the four aspects covered.

6.1.   Community Capacity Index:

The first dimension measures the general capacity of community to organize and deal with public matters, routine matters as well as to manage community affairs during the time of crisis. The main features that
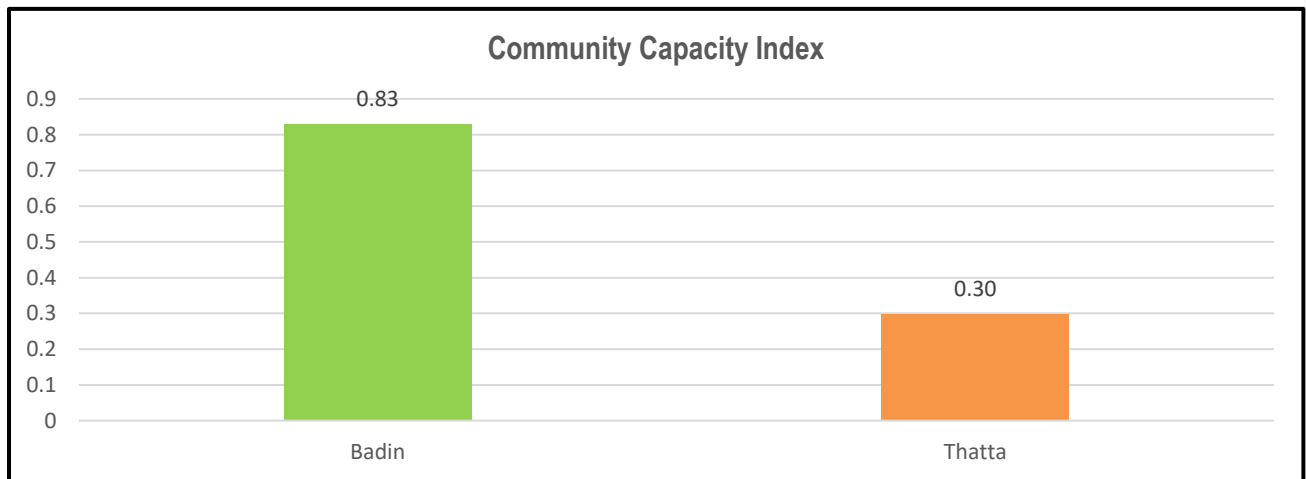
Figure 13: Community Capacity Index

are characteristic to building a resilient community such as leadership, the ability to adapt, trust in public officials, information, resources and skills are all relevant in this context and are captured through 28 questions in the survey. The interventions in this regard are particularly important to enable communities in order to navigate through challenges in the context of unpredictable and harsh weather conditions: disaster-related stocks such as floods,

drought, locust attacks, with little infrastructure that constantly threatens the lives and livelihoods of vulnerable populations.

Badin & Thatta: *An analysis of the data highlights that communities in Badin are strong and are categorized as "very high" on the resilience radar with a score of 0.83 on the community capacity index. The communities in Badin fare much better as compared to those in Thatta that are characterized as "low" with a score of only 0.30 on the community capacity index of resilience score card.* This implies that project interventions that were rolled out in Badin to strengthen community structures have been gainful in building the capacity of already existent structures in Badin as well as in the development of additional bodies.

The section below highlights a step-by-step analysis of indictors that are relevant for assessing community capacity. The total index score has been calculated by averaging the scores of all indicators that fall under the community capacity block. The indicators have been analyzed individually and disaggregated by gender and respondent categories for establishing a detailed context that lies behind building the capacity of communities through multiple channels.

1. Community Structures:
1.1 Community structures for Disaster Risk Reduction:

Badin: Respondents were asked if there are committees in the community that are operational for disaster risk reduction in both Badin and Thatta. A significant percentage of the respondents in Badin (93.57%) agreed that village committees do exist for disaster risk reduction while remaining 6.43% of the respondents partially agreed. 89.8% of the females agreed and 98.63% of the males reported so while 10.2% of the women and 1.37% of men partially agreed to the statement. *Badin is categorized as "very high" on the community structure indicator of community capacity with a score of 0.97.* This depicts that village level committees have been successfully established to take disaster risk reduction measures and engaging community members effectively as part of the process. Of those who agreed, agricultural workers constitute the highest proportion of the respondents at 55.63% followed by youth representatives (28.13%), women leaders (14.37%), persons with disabilities (1.25%) and ethnic minorities at 0.63%. The statistics reveal that on the

Figure 14: Village Committees for Disaster Risk Reduction Score

whole community is cognizant of the structures that exits for DRR but there is still a need to engage marginalized segments: PWDs and ethnic minorities effectively so that benefits of the project can spill over to those with unique challenges and lack of representation in the community.

Thatta: *On the contrary, Thatta scores starkly low on the community structures indicator of community capacity with a 0.02 score and is categorized as "very low" on the resilience radar.* Only 2.08% of the respondents agreed, while 97.92% of the respondents disagreed that village committees for DRR exists. *The absence of such structures in Thatta highlights those interventions at the community level are paying off in strengthening community capacity in Badin.*

1.2 Community structures for routine issues:

Badin: Majority of the respondents in Badin (89.41%) agreed that village committees exist for dealing with routine issues in the community while 10.59% of the respondents partially agreed; 83.51% of the females agreed while 97.26% of the males agreed. Of those who agreed, agricultural workers constitute the highest proportion of respondents at 55.92% followed by youth representatives (28.29%), women leaders (13.82%), persons with disabilities (1.32%) and ethnic minorities at 0.66%. *The establishment of village structures puts Badin in a "very high"*

category on the community capacity index with a score of 0.95 depicting that community can navigate through routine matters of the village efficiently. There is however a need to make these structures accessible to the marginalized segments: PWDs and ethnic minorities, so that voices of all can be heard and their issues can also be mainstreamed.
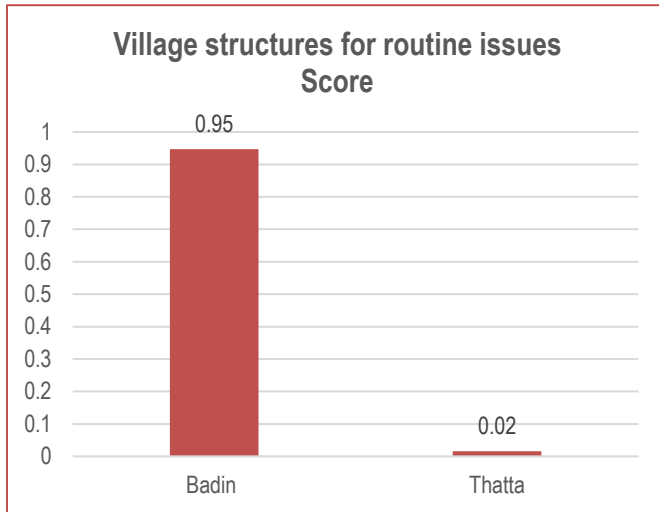

Figure 15: Village Structures for Routine issues

Thatta: *On the contrary, Thatta scores starkly low on the community structures dimension for dealing with routine issues with a 0.02 score and is categorized "very low" on the community capacity index*. None of the respondents fully agreed to the existence of such structures in the community while only 3.13% of the respondents partially agreed. Majority of the respondents (96.88%) disagreed to the statement, indicating that no village structures have been established to deal with routine issues. *The difference in the score highlights that in making a community resilient, it is imperative that structures for dealing issues at the basic level are established and strengthened so that communities are aware as to how to build consensus and move forward with a unified approach when resolving matters during the time of crisis.*

1.3 Community led structures:

Badin: Community members in Badin reported that there are community led structures in place that function effectively. Of those who responded, 37.15% reported there are effective village committees in place, 36.46% reported that the DRR committee works effectively, 12.85% responded that there is an effective resilience academy in the community while 6.6% and 5.9% responded that there is a union council and water management committee respectively. *Badin ranks "medium" on the community-led structures indicator of community capacity index with a score of 0.44.*

Thatta: *Thatta ranks "low" on the community-led structures indicator of community capacity index with a score of 0.25.* Of the respondents who reported union council to be a community-led structure, 53.33% were males while 46.67% were females. Of those who reported that there are other mechanisms in place 45.83% were males and 54.17% were females. As reflected in the data, these "other" community-led structures include NGOs, influential persons, and community-based organizations. *The insignificant difference between the scores of Badin and Thatta shows that more needs to be done to*

Figure 16: Community-led Structure Score

effectively establish community-led structures in Badin so that infrastructure can be built at the community level to mitigate crisis.

2. Community Preparedness:

2.1 Community preparedness, response and recovery:

Badin: Respondents were asked if community plays a leading role in coordinating preparedness, response, recovery and reaching out to all the affected people during a disaster including the most vulnerable through organized and trained volunteers. Majority of the respondents agreed to the statement (85.38%) and 14.04% partially agreed. Only a small percentage (0.58%) of the respondents were unaware when it comes to preparedness of the community for response and recovery. A high percentage of women (77.55%) and of men (95.89%) agreed. Of those who agreed, agricultural workers constitute the highest proportion of the respondents at 58.22% followed by youth representatives (28.08%), women leaders (13.01%), and ethnic minorities at 0.68%. The statistics reveal that though community at large is aware of the preparedness responses and recovery mechanisms, PWDs are not cognizant at all of any such preparedness and recovery responses. This may be a consequence of their exclusion from such planning processes. *On the whole, Badin scores considerable high at 0.92 on the community preparedness, response and recovery indicator of community capacity index and is categorized as "very high"*. However, steps need to be taken to involve the marginalized as part of the planning processes so that preparedness and recovery responses can be designed keeping in view their unique needs.
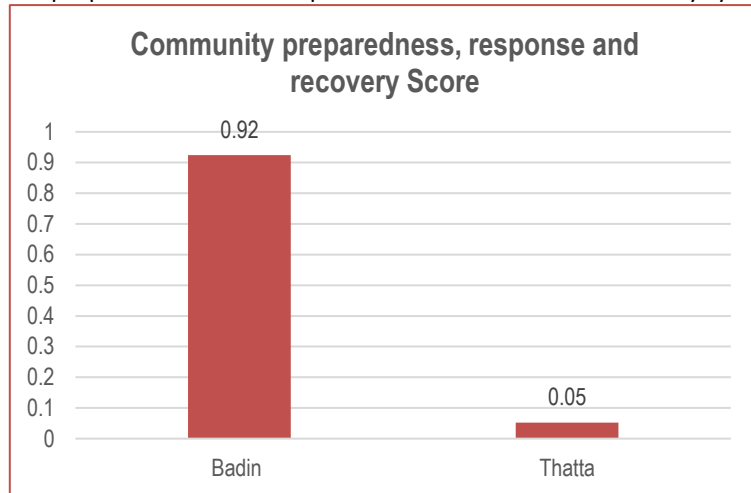
Figure 17: Community preparedness, response & recovery Score

Thatta: An analysis of the data indicates that a vast majority of the respondents (82.11%) disagreed that community plays a leading role in coordinating preparedness, response, recovery and reaching out to all the affected people during a disaster including the most vulnerable through organized and trained volunteers. Only 10.53% of the respondents partially agreed, while the remaining 7.37% reported that they do not have any knowledge regarding the statement. *Thatta is categorized as "very low" on the community preparedness, response and recovery indicator of community capacity index with a score of 0.05.*

2.2 Community organization:

Badin: An analysis of the data reveals that community organization response is efficient and timely in Badin. When respondents were asked about community organization in the time of crisis (floods, drought, locust attack), 4.14% of the respondents reported that community organization response is immediate in the time of the crisis, 63.91% of

Community organization response Score

Figure 18: Community Organization Response Score

the respondents reported that community organization responds after 2-3 days, 10.65% of the respondents reported community organization response was after 7-10 days while 11.83% of the respondents stated that timing of the response varies. *Badin ranks "medium" on the community organization response indicator of community capacity index of resilience radar with a score of 0.60.* Only a small percentage (9.47%) of respondents was not sure of the community organization response. Of those who reported that the response was immediate 42.86% were agricultural workers, while 57.14% were youth representatives while no one reported in affirmative from ethnic minorities, persons with disabilities and women leaders in this category. There is need to delve deeper as to why community response in the time of crisis does not reach timely to vulnerable segments of the community that need aid and assistance the most. More needs to be done for improving community organization response so that resources can be mobilized effectively and efficiently.

Thatta: *Thatta ranks "very low" on the community organization response indicator of community capacity index of the resilience radar with a score of 0.12.* Majority of the respondents (74.74%) reported that they are not sure of the community organization response in the time of crisis. Approximately 11% of the respondents reported that community organization responds after 15-20 days, 3.16% stated that community organization responds after 7-10 days, while 2.11% of the respondents reported that community organization responds after 2-3 days.

3. Warning and monitoring of hazards:

3.1 Alerted in advance:

Badin: Majority of the respondents (93.57%) reported that they are alerted with sufficient time in advance of risks by the community organization. Only 0.58% of the respondents said that they were not alerted of risks in advance while 5.85% of the respondents reported that they were not aware. Approximately 92% of the females reported that they were alerted in advance while 95.89% of the males reported the same. Of those who reported that they were alerted with sufficient time in advance, agricultural workers constitute the highest category, followed by youth representatives at 28.13%, women leaders at 13.13%, PWDs at 1.25% and ethnic minorities at 0.63%. *Badin ranks "very high" on the alerted in advance (early warnings) indicator of community capacity index of the resilience radar with a score of 0.94.*
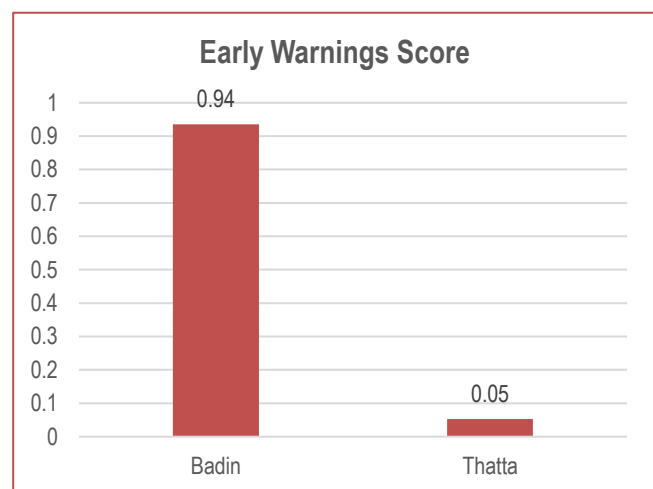
Early Warnings Score

Figure 19: Early Warnings Score

Thatta: *Thatta ranks "very low" on the altered in advance indicator of community capacity index of resilience radar with a score of only 0.05.* Majority of the respondents (83.16%) reported that they are not alerted of the risks with sufficient time in advance and 11.68%

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responded that they do not know of any such mechanisms. Only 5.26% of the respondents reported that they are alerted of the risk with sufficient time in advance.

3.2 Monitoring hazards:

Badin: An analysis of the data indicates that there are well-established mechanisms in place in Badin to monitor hazards. 70% of the respondents reported that there is a disaster risk management committee that monitors hazards, 2.94% of the respondents said that there is a Resilience Academy while 20.59% of the respondents reported that periodic community sessions are held for monitoring hazards. All respondent categories are aware of disaster risk management committee: 57.98% of the agricultural workers, 24.37% of youth representatives, 15.13% of women leaders, 1.68% of PWDs, and 0.84% of ethnic minorities. *Badin ranks "medium" on the monitoring hazards indicator of community capacity index with a score of 0.45.* Data indicates that there is a need for awareness raising to make community cognizant of the structures established for monitoring hazards so that utilization of the resources can be done effectively.

Thatta: *Thatta ranks "low" on the monitoring hazards indicator of community capacity index.* Only 2.11% of the respondents reported that periodic community sessions are held to monitor hazards while a vast majority (97.89%) of the respondents said that there are other mechanisms in place. A review of the data reveals that these other mechanisms to monitor hazards include, interaction with community members and communication through mobile phones.
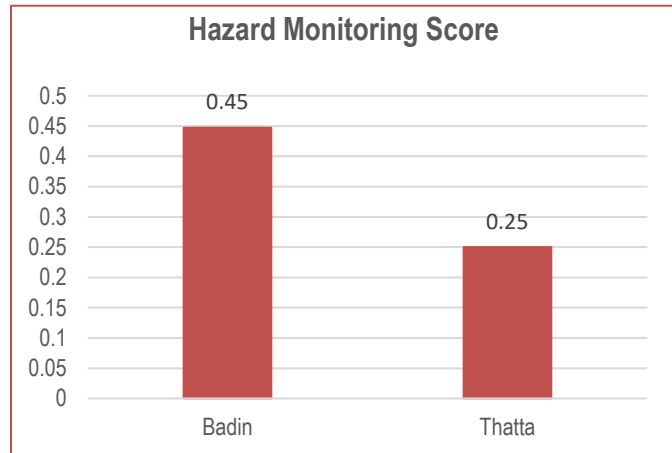
Figure 20: Hazard Monitoring Score

4. Community Planning:
4.1 Mitigation Planning:

Badin: Respondents were asked if village organizations or members plan to mitigate risks from floods, drought, and locust attack. Majority of the respondents (85%) reported in the affirmative. Approximately 12% of the respondents reported that community plans sometimes, while 0.59% of the respondents reported that community does not plan. Approximately 1% of the respondents reported they are not aware of any such planning. 84.69% of the females and 87.5% of the males responded that village organizations or members plan to mitigate risks from floods, drought, and locust attack. *Badin ranks "very high" on the community planning indicator of community capacity index of resilience radar with a score of 0.89.* Of those who reported in the affirmative, agricultural workers have the highest proportion at 56.16%, followed by youth representatives at 30.14% and women leaders at 12.33%. Ethnic minorities and persons with disabilities have a proportion of 0.68% each.
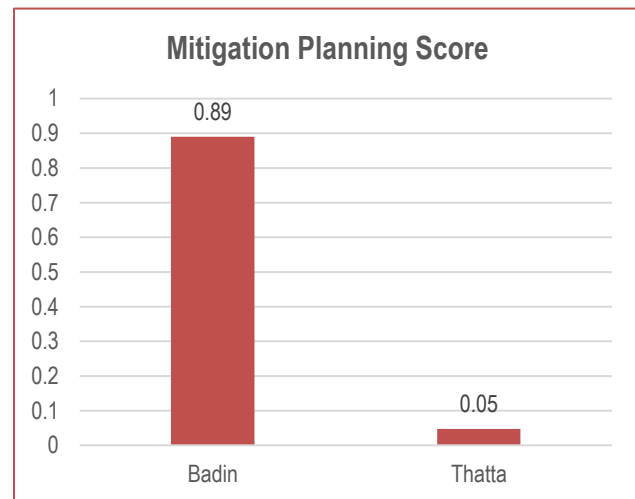
Figure 21: Mitigation Planning Score

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Thatta: *Thatta ranks "very low" on the mitigation planning indicator of community capacity index with a score of 0.05.* Only 2.11% of the respondents reported that village organizations or community members plan to mitigate risks from floods, drought, and locust attack while a vast majority of 81.05% reported that there is no such community planning. 10.53% of the respondents revealed that sometimes the community plans while 6.32% of the respondents were not aware of any such planning.

4.2 Inclusive Planning:

Badin: Majority of the respondents (82.25%) revealed that community makes plans while keeping in view the needs of families and children, while 15.98% of the respondents stated that inclusive planning is practiced to some extent only. 1.18% of the respondents stated that planning is not inclusive while the remaining 0.59% reported that they have no idea. 78.35% of the females and 87.5% of the males reported in the affirmative. Of those who reported that community planning is cognizant of the needs of families and children, agricultural workers have the highest proportion at 58.27%, followed by youth representatives at 28.06%, women leaders at 12.95% and PWDs at 0.72%.
Badin ranks "very high" on the inclusive planning indicator of community capacity index with a score of 0.86.
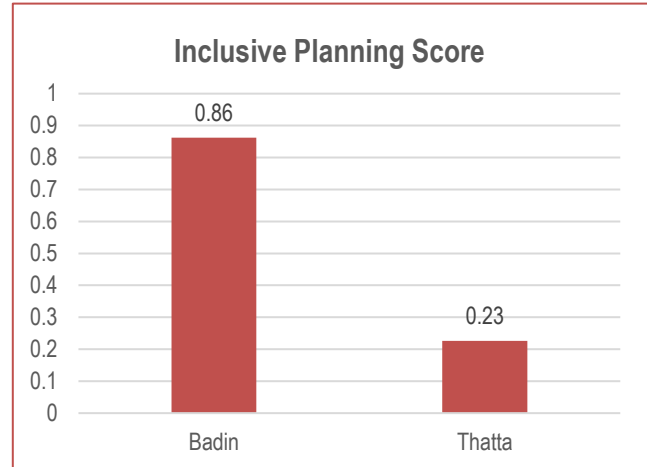
Figure 22: Inclusive Planning Score

Thatta: *Thatta ranks "low" on the inclusive planning indicator of community capacity index with a score of 0.23.* Only 18.75% of the respondents stated that community planning is inclusive, while a large majority of respondents (64.58%) reported that community planning does not include the views of children and families. 15.63% of the respondents reported that community planning is inclusive to some extent while 1.04% of the respondents do not have any idea as to the statement.

4.3 Estimations of expected losses:

Badin: Respondents were asked if the estimations of expected losses from floods, drought or locust attacks are shared by village committees. Majority of the respondents (78.11%) stated that it was the case. The remaining respondents reported that no such estimations are shared (11.24%) and 10.65% of the respondents did not have any idea. 89.69% of the females and 62.5% of the males reported that estimations of expected losses from floods, drought or locust attacks are shared by the village committees. Of those who responded in the affirmative, agricultural workers constitute the highest percentage (55.3%), followed by youth representatives at 25.67%, women leaders at 16.67%, PWDs at 1.52% and ethnic minorities at 0.76%. *Badin is categorized as "high" on the estimation of expected losses indicator of the community capacity index with a score of 0.78.*

Thatta: *Thatta is categorized as "very low" on the estimation of expected losses indicator of community capacity index with a score of 0.02.* Only a small percentage of respondents (2.08%) reported that they are shared estimations of expected losses while a vast majority (87.5%) stated that no such in information is shared by the community organizations while 10.42% of the respondents do not have any idea about the statement.
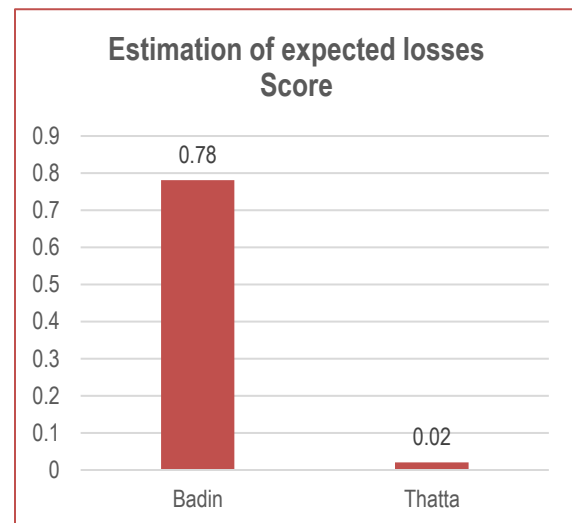

Figure 23: Estimation of expected losses Score

5.   Leadership:

5.1 Communication with leaders:

Badin: A significant percentage of the respondents (88.76%) agreed that people in the community communicate with leaders in order to work towards improving the community: 82.47% of the females and 97.22% of the males agreed. 10.65% of the respondents partially agreed to the statement while only a small percentage of respondents (0.59%) disagreed that any such communication exists. Of those who agreed, agricultural workers constitute the highest percentage (57.33%), followed by youth representatives (28.67%), women leaders (13.33%) and persons with disabilities 0.67%. No one from ethnic minorities reported that communication exits with leaders for improving the community. This highlights the need to develop structures that give representation to minorities and access to leaders for discussing their matters. *Badin is categorized as "very high" on the indicator - communication with leaders - of the community capacity index with a score of 0.94.*
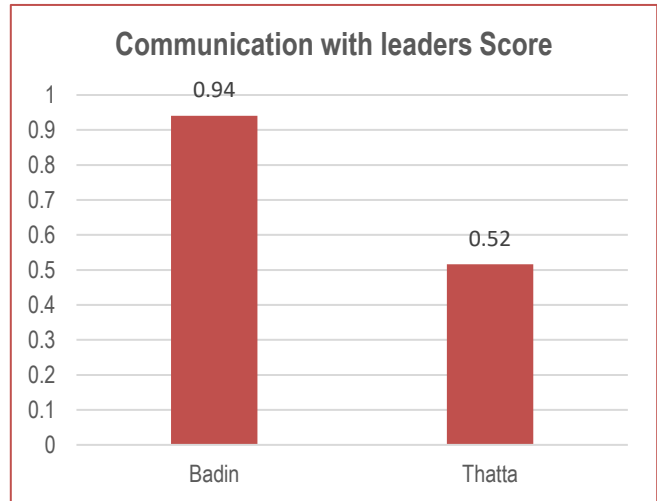
Figure 24: Communication with leaders Score

Thatta: *Thatta is categorized as "medium" on the indicator - communication with leaders - of community capacity index with a score of 0.52.* Majority of the respondents (90.53%) partially agreed to the statement while only 6.32% of respondents agreed. A small percentage of the respondents (3.16%) disagreed that people in the community communicate with leaders. Of those who agreed, agricultural workers constitute the highest percentage (57.33%), followed by youth representatives (28.67%), women leaders (13.33%) and persons with disabilities 0.67%.

5.1 Effective planning by community leaders:

Badin: Majority of the respondents (88.69%) agreed that community leaders help the community in effectively planning and deciding for disaster preparedness: 85.42% of the females and 93.06% of the males agreed - while the remaining 11.31% partially agreed to the statement. No one fully disagreed that community leaders are playing a central role in effective planning for disaster preparedness. Of those who agreed, agricultural workers constitute the highest percentage (57.05%), followed by youth representatives (28.19%), women leaders (13.42%) and persons with disabilities (1.34%). No one from ethnic minorities agreed to the statement. *Badin is categorized as "very high" on the effective leadership indicator of the community capacity index with a score of 0.94.*

Thatta: *Thatta is categorized as "medium" on the effective leadership indicator of community capacity index with a score of 0.43.* Majority of the respondents (72.63%) partially agreed to the statement, 6.32% agreed to the statement while a significant percentage (21.05%) disagreed.

Figure 25: Effective planning by leaders Score

5.2 Open discussions and debates:

Badin: A vast majority of the respondents (93.94%) stated open discussions and debates on disaster risk reduction are held in the community, while only a small percentage of respondents (1.82%) disagreed to the statement. 4.24% of the respondents had not idea regarding the situation when asked. 90.32% of females and 98.61% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (56.13%), followed by youth representatives (27.74%), women leaders (14.19%) and persons with disabilities (1.29%) and ethnic minorities at 0.65%. *Badin is categorized as "very high" on conducting open discussions and debates in the community with a score of 0.94.* As reflected in the data, discussions were held on both disaster risk reduction and on lessons learnt from previous disasters.
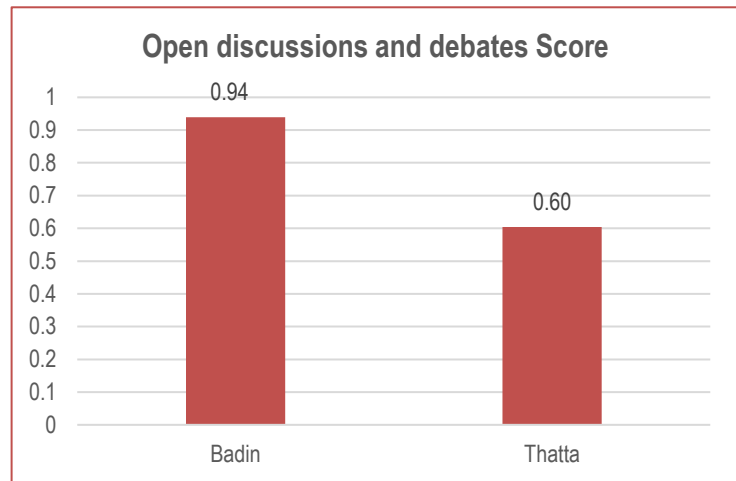
Figure 26: Open discussions and debates Score

Thatta: *Thatta is categorized as "medium" on conducting open discussions and debates in the community with a score of 0.60.* A considerable majority (60.24%) agreed that open discussions and debates are held in the community. 36.46% of the respondents disagreed and 3.13% of the respondents stated that they do not have any idea. As reflected in the data, discussions were held on both disaster risk reduction and on lessons learnt from previous disasters.

6.   Problem solving:

6.1 Skills and Resources:

Badin: Respondents were asked if the community develops skills and finds resources to solve its problems and reach its goals. Majority of the respondents (85.71%) agreed to the statement: 80.41% of females and 92.96% of males agreed while 14.29% partially agreed. No one from the respondents disagreed. Of those who agreed, agricultural workers constitute the highest percentage (56.25%), followed by youth representatives (28.47%), women leaders (13.89%), persons with disabilities (0.69%) and ethnic minorities (0.69%). *Badin is categorized as "very high" on the skills and resources' indicator of the community capacity index with a score of 0.93.* A significant percentage of respondents (79.41%) agreed that these skills are adequate to fulfill the role in DRR.

Thatta: *Thatta is categorized as "medium" on the leadership indicator of community capacity index with a score of 0.31.* Majority of the respondents (60.42%) partially agreed to the statement, 1.04% agreed to the statement while a significant percentage (38.54%)
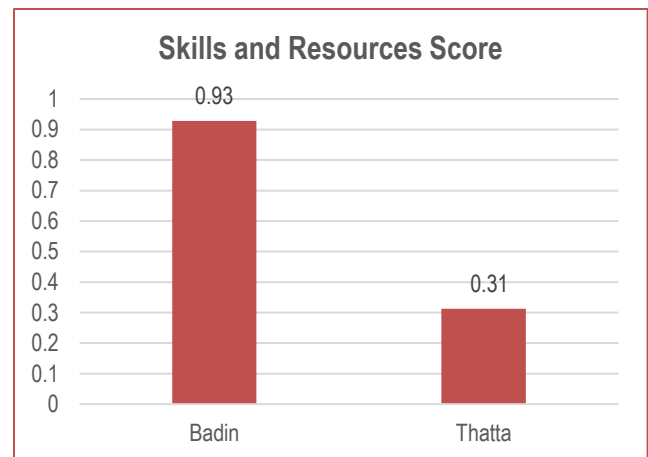
Figure 27: Skills and Resources Score

disagreed. A significant percentage of respondents (77.08%) agreed that these skills are adequate to fulfill the role in DRR.

6.2 Lessons from the past:

Badin: Majority of the respondents (86.67%) agreed that the community looks at its success and failures to learn from the past; 84.21% of the females and 90% of the males agreed. Of those who agreed, agricultural workers constitute the highest percentage (56.64%), followed by youth representatives (27.97%), women leaders (13.99%), persons with disabilities (0.7%) and ethnic minorities (0.7%). _Badin is categorized as "very high" with a score of 0.94 on the lessons from past indicator of community capacity index._ A vast majority (81.33%) is of the opinion that decisions taken in the community result in problem solving.

Thatta: _Thatta is categorized as "low on the lessons from past indicator of community capacity index with a score of 0.36._ Majority of the respondents (70.83%) partially agreed to the statement, 1.04% agreed to the statement while a significant percentage (28.13%) disagreed. Only 17.71% of the respondents are of the opinion that decisions taken in the community result in problem solving.

Lessons from past Score
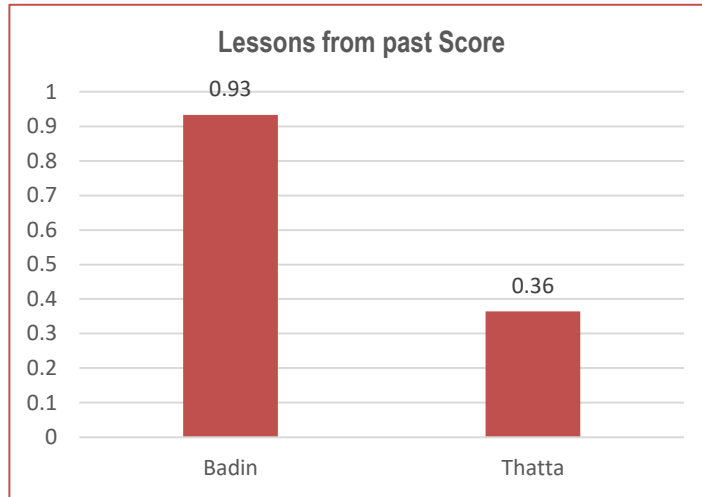
Figure 28: Lessons from past Score

7. Information and Trust:

7.1 Accessible information:

Badin: Majority of the respondents (84.62%) agreed that the community keeps its people informed about the issues that are relevant: 78.35% of the females and 93.06% of the males agreed while 14.2% of the respondents partially agreed. Only a small percentage (1.18%) disagreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (55.24%), followed by youth representatives (30.77%), women leaders (12.59%), persons with disabilities (0.7%) and ethnic minorities at (0.7%). _Badin is categorized as "very high" with a score of 0.92 on the accessible information indicator of community capacity index._ 97.02% of the respondents reported that they have access to some type communication system that allows information to flow during the emergency. 81.65% of the respondents use mobile phones, 1.83% of the respondents gather information from DRR committee, only 2.8% of the respondents use the early warning app, 8.26% gather information from leaders, 4.58% from community members and only 0.92% from the mosque.
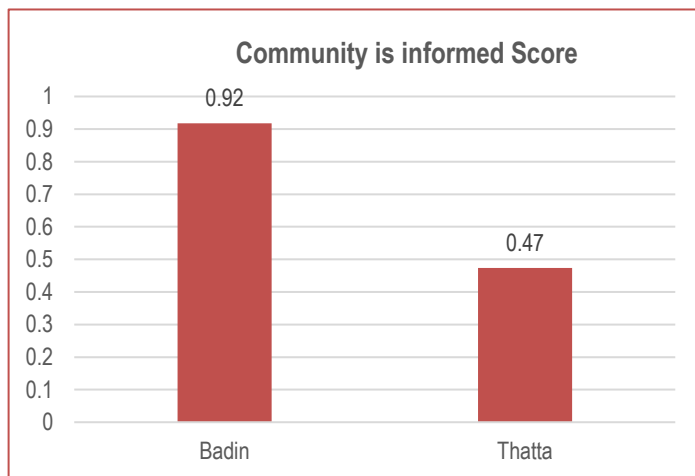
Community is informed Score

Figure 29: Community is informed Score

Thatta: _Thatta is categorized as "medium" on the accessible information indicator of community capacity index with a score of 0.47._ Majority of the respondents (69.79%) partially agreed to the statement, 12.57% agreed to the statement while a significant percentage (17.17%) disagreed. 98.11% of the respondents use mobile phone to share information while the remaining 1.89% share information in mosques.

7.2 Trust in Public Officials:

Badin: A vast majority of the respondents (76.36%) stated that people in community trust public officials, while 18.18% of the respondents partially agreed to the statement. A small percentage of the respondents (5.45%) disagreed that people in community trust public officials. Of those who agreed, agricultural workers constitute the highest percentage (53.97%), followed by youth representatives (29.37%), women leaders (15.08%), persons with disabilities (0.79%) and ethnic minorities (0.79%). *Badin is categorized as "very high" with a score of 0.85 on the trust in public officials' indicator of community capacity index.*

Thatta: *Thatta is categorized as "low" on the trust in public officials' indicator of community capacity index with a score of 0.38.* Majority of the respondents (64.52%) partially agreed to the statement, 5.38% agreed to the statement while a significant percentage (30.11%) disagreed.
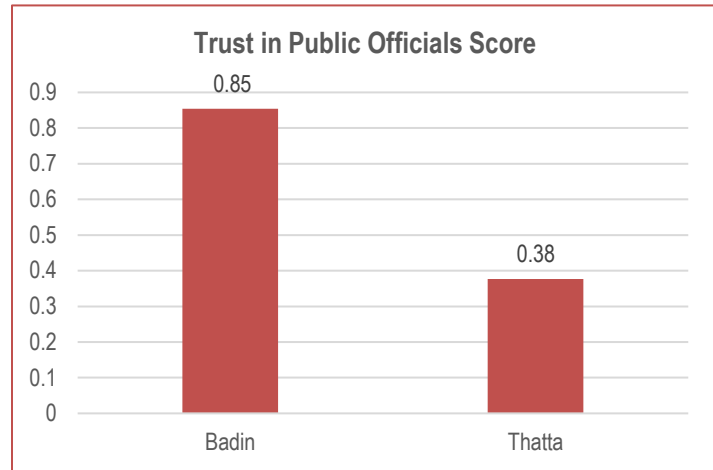
Figure 30: Trust in Public Officials Score

8. Shelters:

Badin: Respondents were asked if there are spaces/buildings with adequate conditions that can be used as shelters during the time of a disaster. Majority of the respondents (74.56%) agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (55.56 %), followed by youth representatives (24.60%), women leaders (19.05%), persons with disabilities (0.79%). 29.69% of the respondents reported that these buildings have water supply, 19.53% stated that there are latrines in these buildings, 37.5% reported that shelters have sleeping spaces, 12.5% stated that first aid is also available and 0.78% reported that these buildings have food storage spaces. None of the respondents from ethnic minorities agreed to the statement. A considerable number of respondents (23.08%) stated that there are no such buildings. *Badin is categorized as "high" with a score of 0.75 on the provisions of shelters indicator of community capacity index.* When asked if these spaces include access for PWDs, 63.16% of the respondents agreed to the statement. 94.01% of the respondents stated that construction methods used in the community increase resistance to disasters.
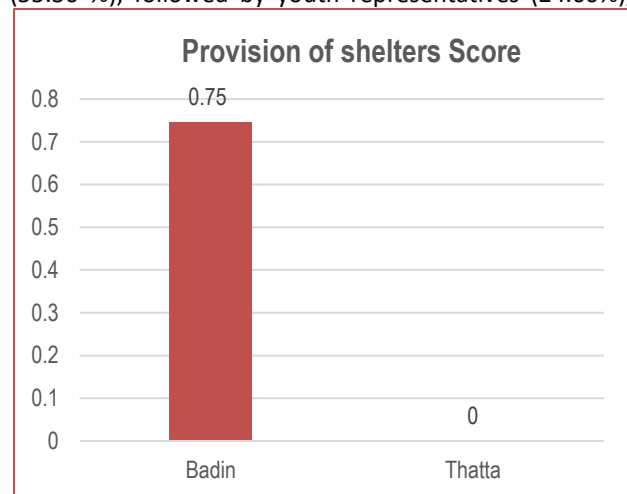

Figure 31: Provision of shelters Score

Thatta: *Thatta is categorized as "very low" on the provision of shelters indicator of community capacity index with a score of 0.0.* A significant majority of the respondents (97.87%) stated that there are no spaces/buildings with adequate conditions that can be used as shelters during the disaster, while the remaining 2.13% did not have any idea regarding the situation. 56.25% of the respondents stated that construction methods used in the community increase resistance to disasters.

9.   Access to Food:

Badin: Majority of the respondents (92.9%) stated that they have access to food during the time of the disaster; 94.79% of the females and 90.41% of the males agreed that they have access to food during disaster. Of those who agreed, agricultural workers constitute the highest percentage (53.50%), followed by youth representatives (29.30%), women leaders (15.29%), persons with disabilities (1.27 %) and ethnic minorities (0.64%).   The respondents are able to access food through communal grain banks, preserves, purchasing from the market and stockpiling reserves. *Badin is categorized as "very high" with a score of 0.93 on the access to food during disaster indicator of community capacity index.* 62.34% of the respondents reported that the community has hazard tolerant crops, 9.21% of the respondents reported that the community practices soil conservation techniques and 26.78% of the respondents reported water management techniques are practiced.

Thatta: *Thatta is categorized as "low" with a score of 0.34 on the access to food during disaster indicator of community capacity index*. Only 33.68% of the respondents stated that they can access food during disaster.

Figure 32: Access to Food Score

9.1 Wells and Aid distribution points for PWDs:

Badin: A considerable majority of the respondents (55.21%) stated that that there are wells and aid distribution points for persons with disabilities: 73.4% of the females and 30.43% of the males agreed, while 44.79% of the respondents disagreed. Of those who agreed, agricultural workers constitute the highest percentage (47.78%), followed by youth representatives (27.78%), women leaders (22.22%), and persons with disabilities (2.22%). None of the respondents from ethnic minorities agreed to the statement. *Badin is categorized as "medium" with a score of 0.55 on the availability of wells and aid distribution points' indicator of community capacity index.*
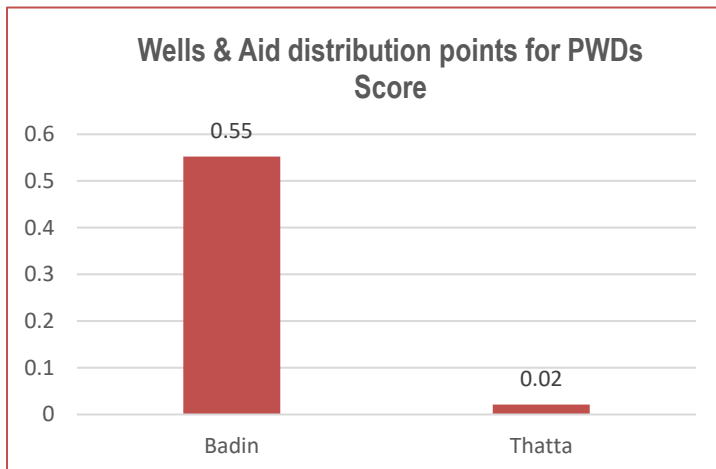
Thatta: *Thatta is categorized as "very low" with a score of 0.02 on the availability of wells and aid distribution points' indicator of community capacity index.* Only 2.11% of the respondents stated that there are well and aid distribution points for PWDs while a significant majority 97.89% stated that there are no such facilities for PWDs.

Figure 33: Wells & Aid distribution points for PWDs Score

10. Coordination mechanisms:

Badin: A significant number of respondents (95.78%) reported that coordination mechanisms exist between government and village committees: 100% of the females and 90.28% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (54.72%), followed by youth representatives (29.56%), women leaders (13.84 %), persons with disabilities (1.26%) and ethnic minorities (0.63%). *Badin is categorized as "very high" with a score of 0.96 on the existence of coordination mechanisms' indicator of community capacity index.* The coordination is mainly done through traditional community meetings and from UC representatives

Thatta: *Thatta is categorized as "very low" with a score of 0.02 on the existence of coordination mechanisms' indicator of community capacity index.* A vast majority of the respondents (97.92%) reported that there are no coordination mechanisms between the government and village committees.
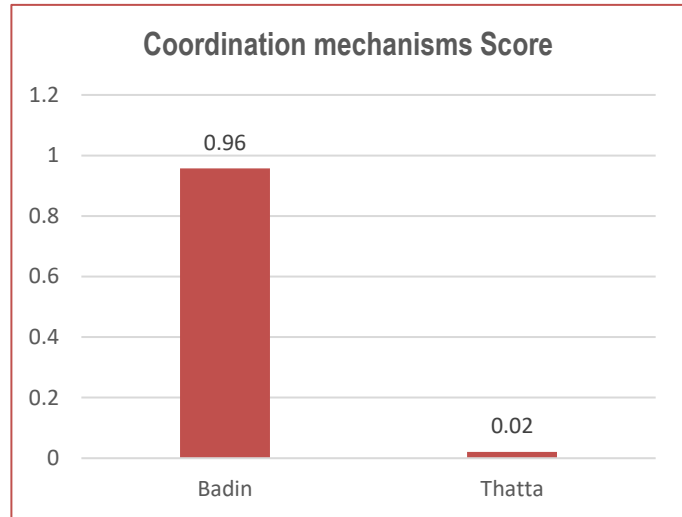
Figure 34: Coordination mechanisms Score

Oxfam

Snapshot of Community Capacity Index

Indicators	Badin		Thatta	
	Score	Resilience	Score	Resilience
Village committees for DRR	0.97	very high	0.02	very low
Village committees for Routine issues	0.95	very high	0.02	very low
Lead role by the community in DRR	0.92	very high	0.05	very low
Timely response during crisis	0.60	Medium	0.08	very low
Early warnings	0.94	very high	0.05	very low
Hazard monitoring	0.45	Medium	0.25	Low
Community led structures	0.44	Medium	0.25	Low
Inclusion of needs of families and children	0.86	very high	0.23	Low
Mitigation Planning	0.89	very high	0.05	very low
Estimations of expected losses	0.78	High	0.02	very low
Communication with leaders	0.94	very high	0.52	Medium
Leaders plan effectively for DRR	0.94	very high	0.43	Medium
Skills and Resources	0.93	very high	0.31	Low
Learns from the past	0.93	very high	0.36	low
Community is informed	0.92	very high	0.47	medium
Trust in public officials	0.85	very high	0.38	low
Open discussions and debates	0.94	very high	0.60	medium
Discussion on DRR issues	0.42	Medium	0.44	medium
Trainings on DRR	1	very high	0.76	high
Adequate skills	0.79	High	0.78	high
Safe shelters	0.75	High	0	very low
Access for PWDs	0.63	High	0	very low
Problem solving	0.85	very high	0.21	low
Access to food during disaster	0.93	very high	0.34	low
Hazard Resistant Livelihoods	0.99	very high	0.89	very high
Communication systems during emergency	0.97	very high	0.58	medium
Well & aid distribution points for PWDs	0.55	Medium	0.02	very low
Hazard resistant construction methods	0.94	very high	0.56	medium
Coordination mechanisms with government	0.96	very high	0.02	very low
Community Capacity Score	**0.83**	**VERY HIGH**	**0.30**	**LOW**

Table 4: Snapshot of Community Capacity Index

DevTrio Consultants

6.2. Social Capital Index:

The second dimension: social capital index aims to include intangible cognitive aspects that help shape collective efforts for community progress or recovery after a disaster. Communities that are characterized by trust and mutual support have been found more likely to rebound from adverse events, and there are numerous studies that find a positive correlation between social capital and various outcomes. Conversely, lower levels of social capital have negative implications for the community. This intangible but crucial aspect is important to consider when planning project interventions. An ideal intervention must build on the existent social capital in the community.

Badin & Thatta: *An analysis of the data highlights that communities in Badin are have a strong social capital and are categorized as "very high" on the social capital index of resilience radar with an index value of 0.95. The communities in Badin fare much better as compared to those in Thatta that are characterized as "medium" with an index score of only 0.59 on the social capital index of resilience radar.*

The section below highlights a step-by-step analysis of indictors that are relevant for assessing social capital. The total index score has been calculated by averaging the scores of all indicators that fall under the social capital block. The indicators have been analyzed individually and disaggregated by gender and respondent categories for establishing a detailed context of the social capital of the community.
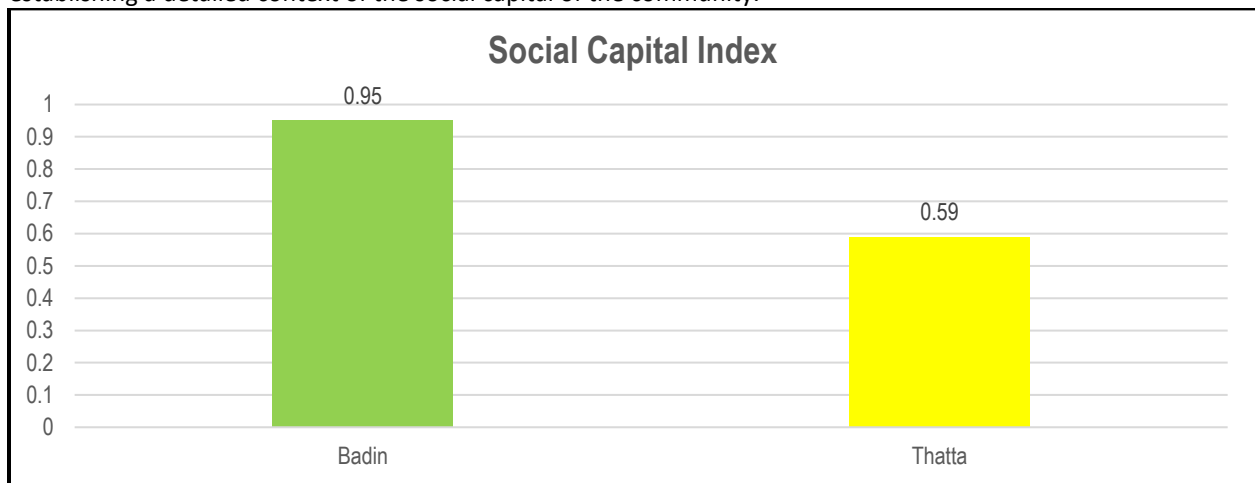
Figure 35: Social Capital Index

1.   Committed to community well-being:

Badin: A vast majority of the respondents (94.71%) agreed that people in the community are committed to well-being of the community. Overall, 91.75% of the females and 98.75% of the males report a sense of commitment to the community well-being. No one disagreed to the statement. *Badin is categorized as "very high" with a score of 0.97 on the commitment to well-being indicator of social capital index.* Of those who agreed, agricultural workers constitute the highest percentage (57.14%), followed by youth representatives (27.95%), women leaders (13.04%), persons with disabilities (1.24%) and ethnic minorities at (0.62%).

Thatta: *Thatta is categorized as "high" with a score of 0.67 on the commitment to well-being indicator of social capital index.* 44.79% of the respondents agreed that people in the community are committed to each other's well-being. 43.75% of the respondents partially agreed while 11.46% of the respondents disagreed.
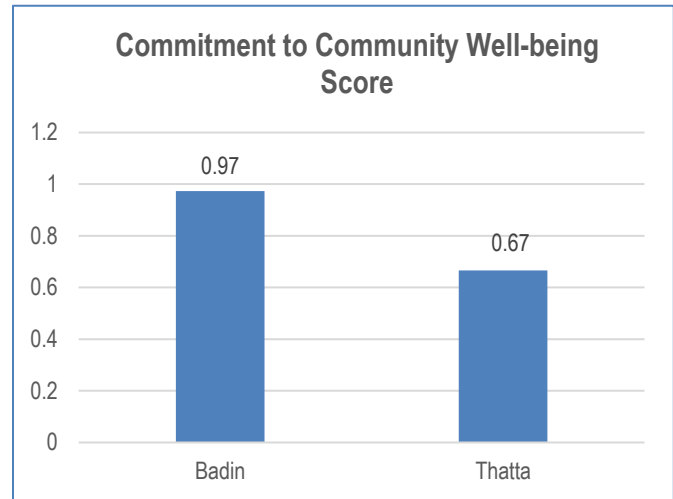
Figure 36: Commitment to Community Well-being Score

1.1 Helpful Community:

Badin: A vast majority of the respondents (94.12%) agreed that people in the community help each other. Overall, 89.69% of the females and 100% of the males agreed to the statement. None of the respondents disagreed to the statement. *Badin is categorized as "very high" with a score of 0.97 on the helpful community indicator of social capital index.* Of those who agreed, agricultural workers constitute the highest percentage (56.25%), followed by youth representatives (28.75%), women leaders (13.13%), persons with disabilities (1.25%) and ethnic minorities (0.63%).
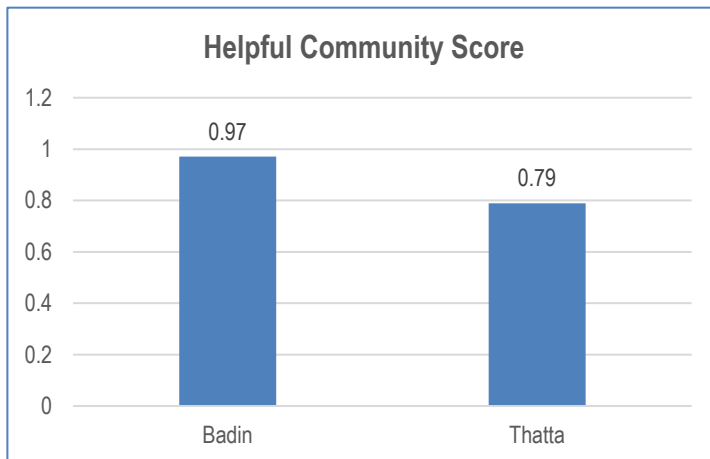
Thatta: *Thatta is categorized as "high" with a score of 0.79 on the helpful community indicator of social capital index.* 61.05% of the respondents agreed that people in the community are helpful. 35.79% of the respondents partially agreed while 3.16% of the respondents disagreed that the community is helpful.

Figure 37: Helpful Community Score

1.2 Level of trust:

Badin: Respondents were asked if they have reliable and trust-worthy friends in the community. A significant number of respondents (91.46%) agreed to the statement: 89.13% of the females and 94.44% of the males stated that they have reliable and trust-worthy friends in the community. None of the respondents disagreed to the statement while 8.54% of the respondents partially agreed. _Badin is categorized as "very high" with a score of 0.96 on the trust and reliability indicator of social capital index._ Of those who agreed, agricultural workers constitute the highest percentage (56%), followed by youth representatives (28.67%), women leaders (14%), persons with disabilities (0.67%) and ethnic minorities (0.67%).

Thatta: _Thatta is also categorized as "very high" with a score of 0.83 on the trust and reliability indicator of social capital index._ 68.42% of the respondents agreed that they have reliable and trust-worthy friends in the community. 29.47% of the respondents partially agreed while 2.11% of the respondents disagreed to the statement.
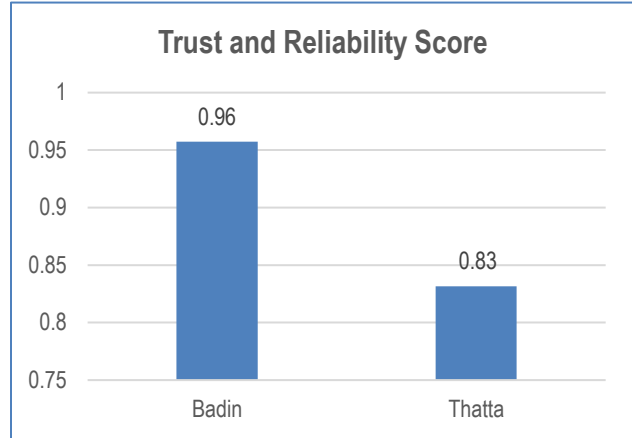
Figure 38: Trust and Reliability Score

1.3 Involvement in community:

Badin: Respondents were asked if they would get involved in community improvement. A significant number of respondents (92.35%) agreed to the statement: 86.6% of the females and 100% of the males stated that they would get involved for community improvement. None of the respondents disagreed to the statement while 7.65% of the respondents partially agreed. _Badin is categorized as "very high" with a score of 0.96 on the involvement in community indicator of social capital index._ Of those who agreed, agricultural workers constitute the highest percentage (54.78%), followed by youth representatives (29.30%), women leaders (14.01%), persons with disabilities (1.27%) and ethnic minorities (0.64%).

Thatta: _Thatta is also categorized as "very high" with a score of 0.86 on the involvement in community indicator of social capital index._ 73.4% of the respondents agreed that they would get involved in the community for improvement. 25.53% of the respondents partially agreed while 1.06% of the respondents disagreed to the statement.
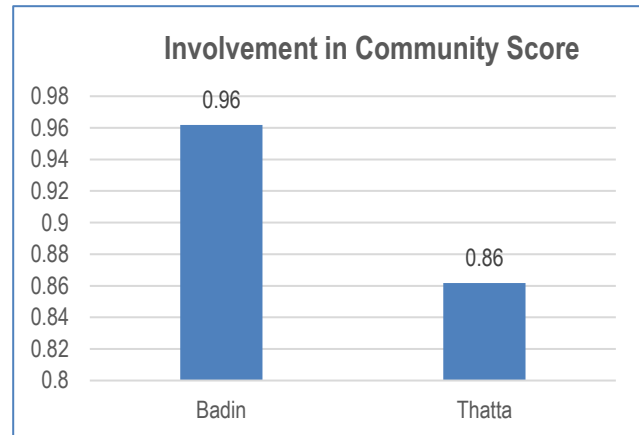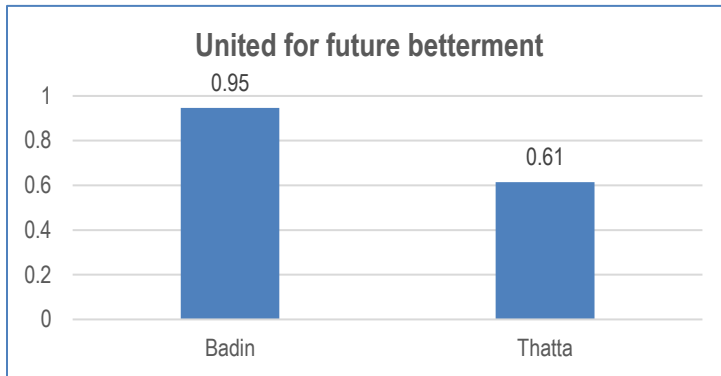

Figure 39: Involvement in Community Score

1.4 United for future betterment:

Badin: Majority of the respondents (89.29%) agreed that people in the community are united to make future better: 82.47% of the females and 98.59% of the males agreed to the statement. None of the respondents disagreed to the statement while 10.71% of the respondents partially agreed. *Badin is categorized as "very high" with a score of 0.95 on the united for future betterment indicator of social capital index.* 91.67% of the respondents believe that people in the community have a general sense of unity and brotherhood. Of those who agreed, agricultural workers constitute the highest percentage (54%), followed by youth representatives (29.33%), women leaders (14.67%), persons with disabilities (1.33%) and ethnic minorities (0.67%). 86.75% of the respondents however reported that there are certain groups in the village who are privileged than the rest and have better access to authorities.

Figure 40: United for future betterment Score

Thatta: *Thatta is also categorized as "high" with a score of 0.61 on the united for future betterment indicator of social capital index.* 34.38% of the respondents agreed that they would get involved in the community for betterment of future. A significant number of respondents (54.17%) partially agreed while 11.46% of the respondents disagreed to the statement. 41.67% of the respondents believe that people in the community have a general sense of unity and brotherhood. Only 1.06% of the respondents however reported that there are certain groups in the village who are privileged than the rest and have better access to authorities.

1.5 Sense of belonging:

Badin: A vast majority of the respondents (92.94%) agreed that people in the community feel like they belong to the community: 89.69% of the females and 97.26% of the males agreed to the statement. None of the respondents disagreed to the statement while 7.06% of the respondents partially agreed. Of those who agreed, agricultural workers constitute the highest percentage (55.70%), followed by youth representatives (28.48%), women leaders (13.92%), persons with disabilities (1.27%) and ethnic minorities (0.63%). *Badin is categorized as "very high" with a score of 0.96 on the sense of belonging indicator of social capital index.*
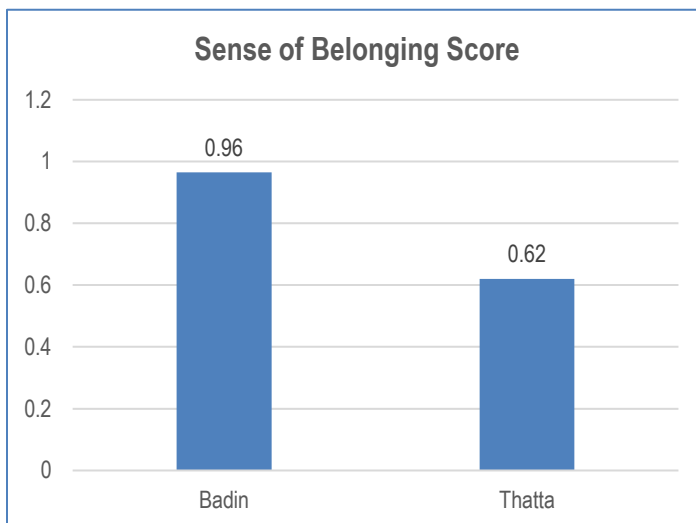
Thatta: *Thatta is also categorized as "high" with a score of 0.62 on the sense of belonging indicator of social capital index.* 32.29% of the respondents agreed that they have a sense of belonging in the community. A significant number of respondents (59.38%) partially agreed while 8.33% of the respondents disagreed to the statement.

Figure 41: Sense of Belonging Score

2.   Support networks:

Badin: A vast majority of the respondents (91.62%) agreed that villages have support networks/structures that provide support in times of emergency and distress: 89.47% of the females and 94.44% of the males agreed to the statement. None of the respondents disagreed to the statement while 8.38% of the respondents partially agreed. *Badin is categorized as "very high" with a score of 0.88 on the support networks indicator of social capital index.* Of those who agreed, agricultural workers constitute the highest percentage (56.08%), followed by youth representatives (27.70%), women leaders (14.86%), persons with disabilities (0.68%) and ethnic minorities (0.68%) 88.1% of the respondents agreed that these support networks assist people with mental and physical disabilities and older people in the event of evacuation, relief distribution, and other disaster management activities.
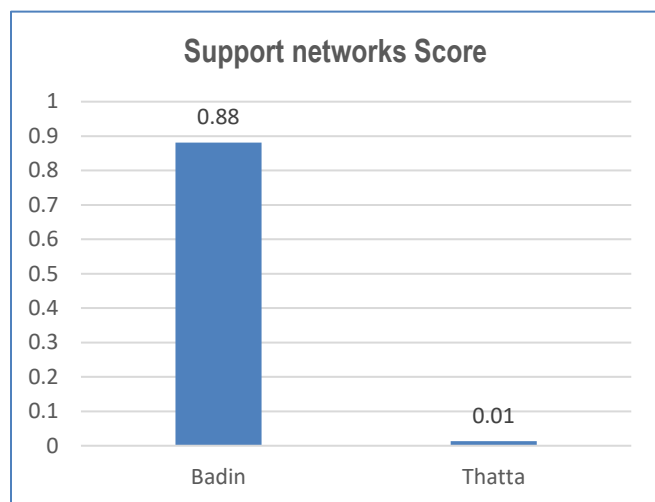

Figure 42: Support networks Score

Thatta: *Thatta is also categorized as "very low" with a score of 0.01 on the support networks indicator of social capital index.* Only 1.04% of the respondents stated that there are support structures that help in the times of emergency and distress. A significant number of respondents (59.38%) disagreed to the statement while 39.58 % of the respondents partially agreed to the statement. Only 1.04% of the respondents agreed that these support networks assist people with mental and physical disabilities and older people in the event of evacuation, relief distribution, and other disaster management activities.

Snapshot of Social Capital Index

	Badin		Thatta	
Indicators	**Score**	**Resilience**	**Score**	**Resilience**
Committed to community well-being	0.97	very high	0.67	high
Helpful community	0.97	very high	0.79	high
Reliable & trust-worthy friends in the community	0.96	very high	0.83	very high
Involvement in the community	0.96	very high	0.86	very high
United for future	0.95	very high	0.61	high
Support networks for PWDs	0.88	very high	0.01	very low
Sense of belonging	0.96	very high	0.62	high
Support structures in times of distress	0.96	very high	0.21	low
Sense of unity & brotherhood	0.96	very high	0.67	High
Social Capital Score	**0.95**	**VERY HIGH**	**0.59**	**MEDIUM**

Table 5: Snapshot of Social Capital Index

6.3.   Inclusivity Index:

The third dimension focuses on the inclusion of all segments of the community including persons with disability and the roles of men and women in public life. Community is more than the sum of its members - working together makes everyone stronger. By contrast, tensions or conflicts tend to curtail development and make it more difficult to implement projects). Communities that harness everybody's abilities, and that capture and address the needs of all members through inclusive problem-solving stand a greater chance at effective outcomes. By contrast, exclusive governance bears the risk of overlooking needs and capacities of those excluded.

Badin & Thatta: *An analysis of the data highlights that communities in Badin are highly inclusive with an inclusivity index value of 0.84. The communities in Badin fare much better as compared to those in Thatta that are characterized as "medium" with an inclusivity index score of only 0.42.*

The section below highlights a step-by-step analysis of indictors that are relevant for assessing social capital. The total index score has been calculated by averaging the scores of all indicators that fall under the inclusiveness block. The indicators have been analyzed individually and disaggregated by gender and respondent categories for establishing a detailed context of the social capital of the community.
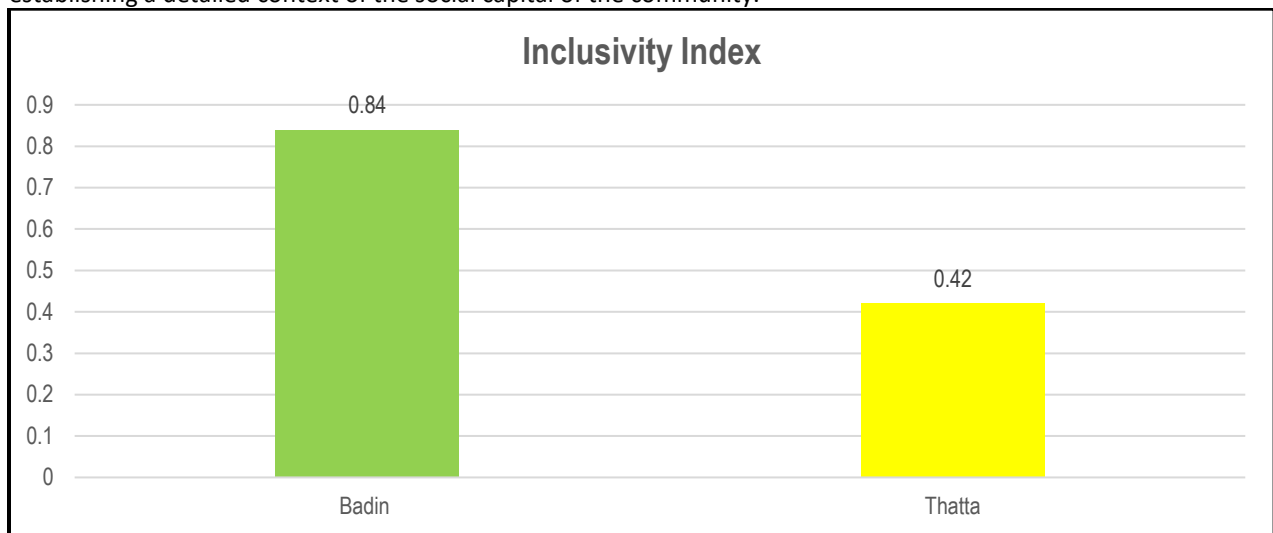

Figure 43: Inclusivity Index

Oxfam

1. Community Behavior:

1.1 Fair Treatment:

Badin: Majority of the respondents (91.12%) agreed that people in the community treats everyone fairly irrespective of different backgrounds; 87.5% of the females and 95.89% of the males agreed to the statement. 8.28% of the respondents partially agreed while 0.59% disagreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (56.49%), followed by youth representatives (27.92%), women leaders (14.29%), persons with disabilities (1.30%) and ethnic minorities at (0.00%). _Badin is categorized as "very high" with a score of 0.95 on the fair treatment indicator of inclusivity index._ Data indicates that there are no on-going tensions and conflicts in the community with a significant number of respondents agreeing to the statement. Only 5.33% of the respondents are of the opinion that there are conflicts and on-going tensions in the community. Measures taken to resolve disputes include taking advise from others, voting in the community and local police station. Majority of the respondents (87.58%) reported that issues are resolved on fair grounds without prejudice towards vulnerable party in case of a local tension or conflict.
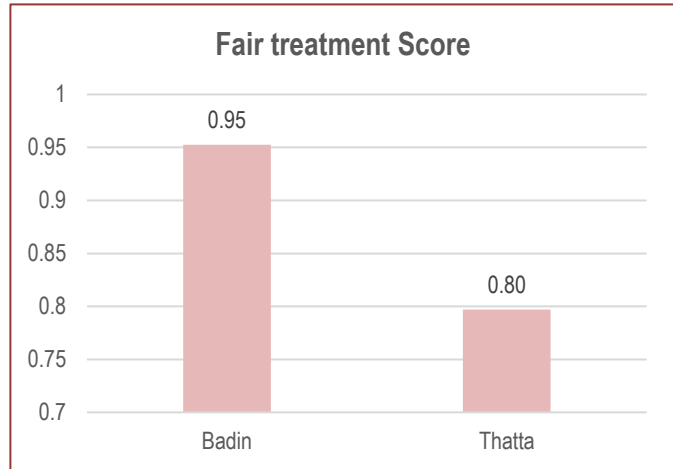

Figure 44: Fair treatment Score

 Thatta: _Thatta is categorized as "high" with a score of 0.80 on the fair treatment indicator of inclusivity index._ 60.42% of the respondents agreed to the statement that people in the community treats everyone fairly irrespective of different backgrounds: 38.54% of the respondents partially agreed while 1.04% of the respondents disagreed to the statement. Only 11.58% of the respondents are of the opinion that there are no conflicts and on-going tensions in the community. 66.32% of the respondents partially agreed while 22.11% of the respondents disagree to the statement. Only 8.42% of the respondents reported that issues are resolved on fair grounds without prejudice towards vulnerable party in case of a local tension or conflict.

1.2 Inclusion of persons with disabilities:

Badin: Respondents were asked if persons with disabilities have roughly the same access to community service like others in the community. A significant number of the respondents (90.53%) agreed to the statement: 87.5% of the females and 94.52% of the males agreed. Of those who agreed, agricultural workers constitute the highest percentage (56.21%), followed by youth representatives (28.76%), women leaders (13.07%), persons with disabilities (1.31%) and ethnic minorities (0.65%).   8.88% of the respondents partially agreed to the statement while the remaining 0.59% disagreed. _Badin is categorized as "very high" with a score of 0.95 on the inclusion of persons with disabilities indicator of inclusivity index._
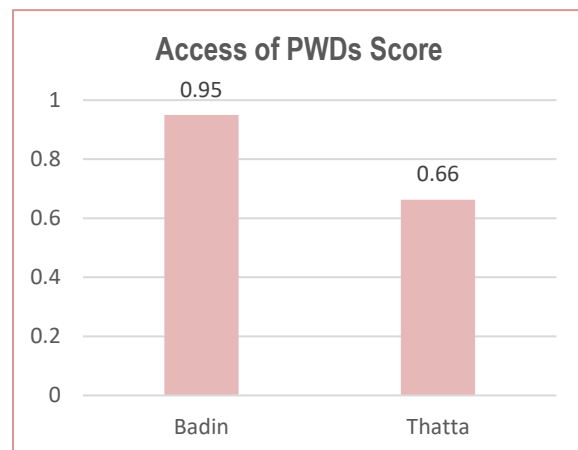
Thatta: _Thatta is categorized as "high" with a score of 0.66 on the inclusion of persons with disabilities indicator of inclusivity index._ A considerable number of respondents

Figure 45: Access of PWDs Score

45.26% agreed to the statement that persons with disabilities have roughly the same access to community services as anybody else. 42.11% of the respondents partially agreed while 12.63% of the respondents disagreed.

DevTrio Consultants

2. Contribution of different segments:

2.1 Meetings and Planning:

Badin: Majority of the respondents (89.47%) are of the opinion that persons with disabilities are valued contributors to community meetings and planning: 86.42% of the females and 92.96% of the males agreed to the statement. 10.53% of the respondents partially agreed to the statement. No one disagreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (57.35%), followed by youth representatives (31.62%), women leaders (10.29%), and persons with disabilities (0.74%). *Badin is categorized as "very high" with a score of 0.95 on the contribution of PWDs indicator of inclusivity index.* A considerable number of respondents (68.05%) reported that equal shares of men and women participate and speak in community meetings. *Badin is categorized as "very high" with a score of 0.81 on the equal representation of men and women on inclusivity index.* It was further reported that both men and women make decisions about village affairs and management of DRR, CSA, recovery and alternative livelihood options.
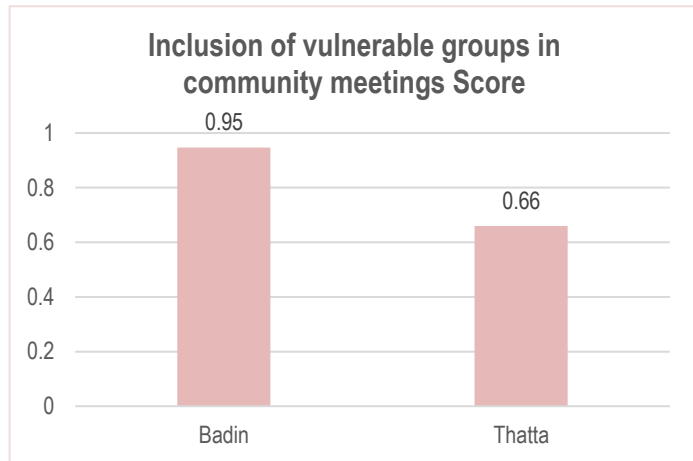
Thatta: *Thatta is categorized as "high" with a score of 0.66 on the contribution of PWDs indicator of inclusivity index.* Only 38.3% of the respondents agree that persons with disabilities are valued contributors to community meetings and planning, while a majority of respondents 55.32% partially agreed to the statement. 6.38% of the respondents disagreed to the statement. *Thatta is categorized as "low" with a score of 0.35 on the equal representation of men and women indicator of inclusivity index.* A significant number (53.13%) reported that only men participate and speaks in community meeting and make decisions about village affairs and management of DRR, CSA, recovery and alternative livelihood options.

Figure 46: Inclusion of vulnerable groups in community meetings Score

2.2 Decision making on DRR, CSA and Recovery:

Badin: A signification number of respondents (92.81%) are of the opinion that vulnerable groups in the community (minorities, PWDs and trans genders) are included and represented in the community decision making on DRR, CSA and recovery: 88.42% of females and 98.61% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (56.77%), followed by youth representatives (29.68%), women leaders (12.26%), and persons with disabilities (1.29%). None of the respondents from ethnic minorities agreed to the statement. 5.39% of the respondents do not have any idea regarding the statement while 1.8% of the respondents disagreed to the statement. *Badin is categorized as "very high" with a score of 0.93 on the contribution of vulnerable groups in decision making indicator of inclusivity index.* 75.56% of the respondents stated that the participation of vulnerable groups in community decision making is active and frequent. The representation however needs to be improved as data reflects those women and elders are still among the least represented segments of the community.
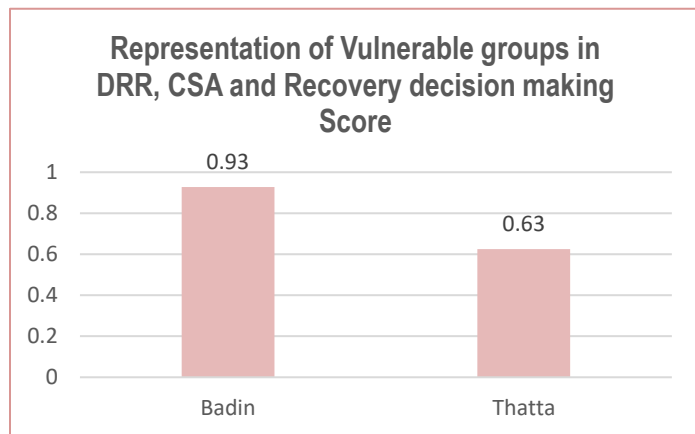

Figure 47: Representation of Vulnerable groups in DRR, CSA and Recovery decision making Score

Thatta: *Thatta is categorized as "high" with a score of 0.63 on the contribution of vulnerable groups in decision making indicator of inclusivity index.* A considerable number of respondents (62.5%) are of the opinion that vulnerable groups in the community (minorities, PWDs and trans genders) contribute in community decision making on DRR, CSA and recovery. 27.08% of the respondents disagreed to the statement while 10.42% do not have any idea regarding the statement. 57.29% of the respondents stated that the participation of vulnerable groups in community decision making is active and frequent. The representation however needs to be improved as data reflects that women, PWDs, minorities and elders are still among the least represented segments of the community.

3. Participation of Women:
3.1 Trainings and Drills:

Badin: Majority of the respondents (80.95%) stated that women participate in training and drills for early warning and evacuation; 79.17% of the females and 83.33% of the males agreed to the statement. A small percentage of respondents stated otherwise. Only 6.55% of the respondents do not have any idea as to the participation of women in such trainings. Of those who agreed, agricultural workers constitute the highest percentage (51.47%), followed by youth representatives (31.62%), women leaders (14.71%), persons with disabilities (1.47%) and ethnic minorities (0.74%). *Badin is categorized as "very high" with a score of 0.81 on the participation of women in trainings and drills for early warning and evacuation indicator of inclusivity index.* 92.13% of the respondents reported that women participate actively and frequently.

Thatta: *Thatta is categorized as "very low" with a score of 0.07 on the participation of women in trainings and drills for early warning and evacuation indicator of inclusivity index.* Only 7.37% of the respondents reported that women participate in training and drills for early warning and evacuation, while a large majority (85.26%) of the respondents stated otherwise. Only 7.37% of the respondents do not have any idea as to the participation of women in trainings and drills.
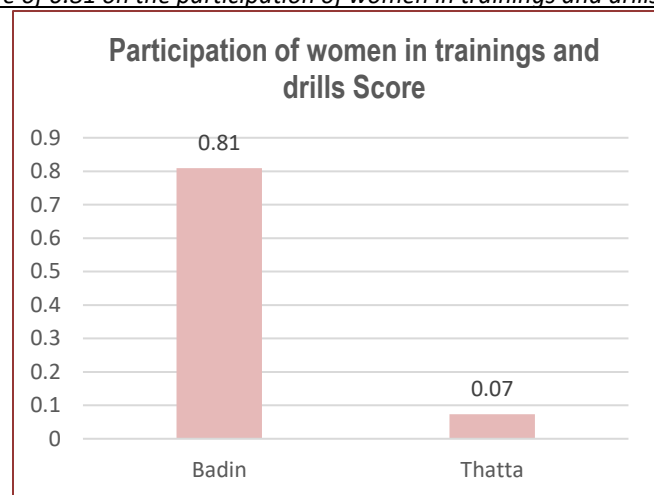

Figure 48: Participation of women in trainings and drills Score

3.2 Women in leadership positions:

Badin: A large majority of the respondents (92.03%) reported that women occupy leadership positions in the drills that are conducted for early warning and evacuation; 92.11% of the females and 91.94% of the males agreed to the statement. Only a small percentage of respondents (2.17%) stated otherwise, while the remaining (5.8%) do not have any idea. Of those who agreed, agricultural workers constitute the highest percentage (53.54 %), followed by youth representatives (33.07%), women leaders (11.81%), persons with disabilities (0.79%) and ethnic minorities (0.79%). *Badin is categorized as "very high" with a score of 0.92 on women leadership indicator of inclusivity index.*
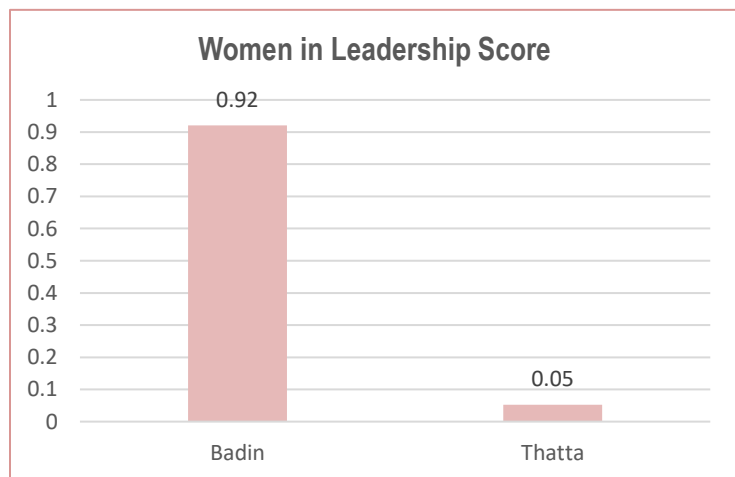

Figure 49: Women in Leadership Score

Thatta: _Thatta is categorized as "very low" with a score of 0.05 on women leadership indicator of inclusivity index._ A vast majority of the respondents (94.74%) reported that women do not occupy leadership positions in the drills that are held for early evacuation and recovery.

Snapshot of Inclusivity Index

	Badin		Thatta	
	Score	**Resilience**	**Score**	**Resilience**
Fair treatment irrespective of the background	0.95	very high	0.80	high
No ongoing tensions and conflicts	0.90	very high	0.45	medium
Access of PWDs	0.95	very high	0.66	high
PWDs contribute in community meetings	0.95	very high	0.66	high
Equal participation in community meetings	0.81	very high	0.35	low
Equal influence on DRR, CSA and recovery decisions	0.74	high	0.22	low
Representation of vulnerable groups	0.93	very high	0.63	high
Participation of vulnerable groups	0.38	low	0.29	low
Women participation in trainings & drills	0.81	very high	0.07	very low
Women leadership	0.92	very high	0.05	very low
Tensions resolved on fair grounds	0.93	very high	0.48	medium
Inclusivity Score	**0.84**	**VERY HIGH**	**0.42**	**MEDIUM**

Table 6: Snapshot of Inclusivity Index

6.4.   Connectedness Index:

The fourth dimension of the resilience radar assesses the connectedness of communities with government agencies, groups, associations, and companies. The indicators below cover both sides of the relations between communities and external actors - approaches by the community to seek support as well as the level of responsiveness from external actors. Both in the management of general affairs and in times of crises, external support to communities is critical for general prospects and recovery from crises. The importance of connectedness becomes clear when two communities - one being isolated and un-supported, and the other one being well-connected and supported, are compared.
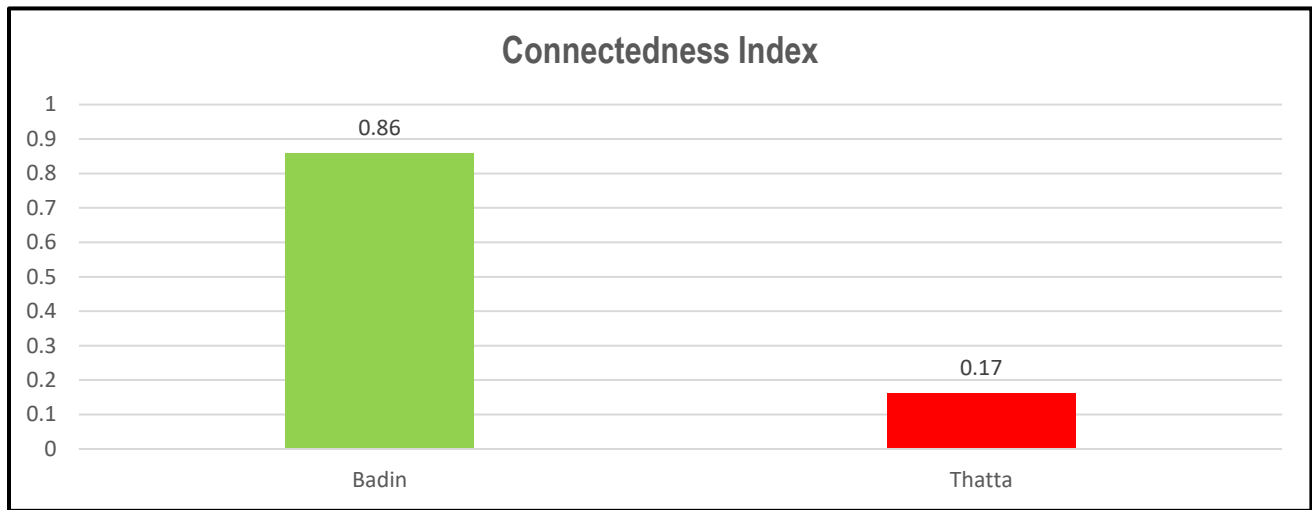

Figure 50: Connectedness Index

Badin & Thatta: *An analysis of the data highlights that communities in Badin are strong and are categorized as "very high" on the connectedness index of resilience radar with an index value of 0.86. The communities in Badin fare much better as compared to those in Thatta that are characterized as "very low" with an index score of only 0.17 on the connectedness index of resilience radar.*

The section below highlights a step-by-step analysis of indictors that are relevant for assessing connectedness of the community. The total index score has been calculated by averaging the scores of all indicators that fall under the connectedness block. The indicators have been analyzed individually and disaggregated by gender and respondent categories for establishing a detailed context that lies behind building connectedness of the communities through multiple channels.

1. Partnership with District Authorities:

Badin: A large majority of the respondents (88.82%) agree that the community works with government authorities (DDMA/PDMA/SWD/livestock department) and NGOs for disaster management; 87.63% of the females and 90.41% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (54.30%), followed by youth representatives (31.13%), women leaders (13.25%), persons with disabilities (0.66%) and ethnic minorities (0.66%).

Only a negligible percentage of respondents (0.59%) stated otherwise, while the remaining (8.82%) partially agreed and 1.76% do not know about any such partnerships. _Badin is categorized as "very high" with a score of 0.93 on the indicator of partnerships with district authorities of connectedness index._ 92.59% of the respondents are of the opinion that these partnerships have resulted in risk reduction and recovery.

Thatta: _Thatta is categorized as "very low" with a score of 0.07 on the indicator of partnerships with district authorities of connectedness index._ A vast majority of the respondents (81.25%) disagreed to the statement; while only 3.13% of the respondents agreed and 7.29% of the respondents partially agreed. 8.33% of the respondents do not know about any such partnerships.
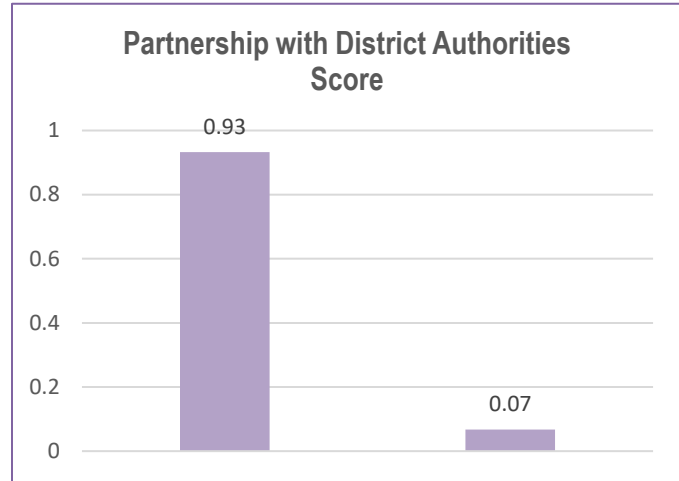

Figure 51: Partnership with District Authorities Score

2. Community reach to relevant authorities:

Badin: A large majority of the respondents (80%) agreed that the community works with government authorities (DDMA/PDMA/SWD/livestock department) and NGOs if there is a problem that the community cannot solve regarding disaster management; 72.16% of the females and 90.41% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (56.62%), followed by youth representatives (29.41%), women leaders (12.50%), persons with disabilities (0.74%) and ethnic minorities (0.74%). Only a negligible percentage of respondents (1.18%) stated otherwise, while the remaining (10.59%) partially agreed and 8.24% do not know have any idea as per the statement. _Badin is categorized as "very high" with a score of 0.85 on the indicator of community reach to authorities of connectedness index._ The community is aware of partnerships with government, HANDS, Union Council, and SRSO. 86.47% of the respondents are of the opinion that village members frequently stay in touch with DDMA representatives to stay updated. 80.47% of the respondents stated that in case of a disaster, village members of the committee reach out to relevant departments for support.

Thatta: _Thatta is categorized as "very low" with a score of 0.07 on the indicator of community reach to authorities of connectedness index._ A large majority of the respondents (82.11%) disagreed to the statement; while only 2.11% of the respondents agreed and
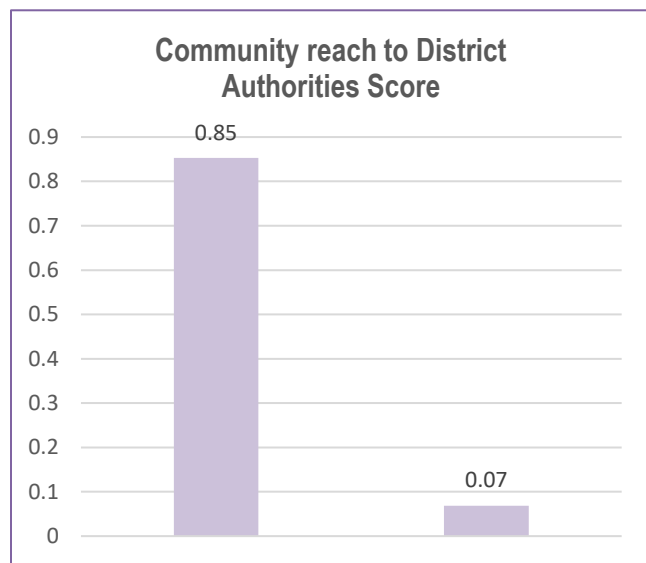

Figure 52: Community reach to District Authorities Score

9.47% of the respondents partially agreed. 6.32% of the respondents do not have any idea. None of the respondents reported that they stay in touch with DDMA to stay updated.

3.   Support from Authorities:

Badin: Respondents were asked if district authorities usually take up their issues and provide support. A large majority of the respondents (86.47%) agreed; 85.57% of the females and 87.67% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (56.46%), followed by youth representatives (29.93%), women leaders (11.56%), persons with disabilities (1.36%) and ethnic minorities (0.68%). Only a negligible percentage of respondents (1.76%) stated otherwise, while the remaining (10.59%) partially agreed and 1.18% do not know have any idea about the support system. *Badin is categorized as "very high" with a score of 0.92 on the indicator of support from district authorities of connectedness index.* 79.88% of the respondents reported that DDMA share DRR techniques.

Thatta: *Thatta is categorized as "very low" with a score of 0.08 on the indicator of support from district authorities of connectedness index.* A large majority of the respondents (76.04%) disagreed to the statement; while only 1.04% of the respondents agreed and 14.58% of the respondents partially agreed. 8.33% of the respondents do not have any idea.

Figure 53: Support from District Authorities Score

4.   Provision of health facilities:

Badin: A large majority of the respondents (84.43%) reported that local health authorities continue to provide health facilities to the community in the face of a disaster: 88.3% of the females and 79.45% of the males agreed to the statement. Only a small percentage of respondents (10.78%) stated otherwise, while the remaining (4.79%) do not know have any idea. Of those who agreed, agricultural workers constitute the highest percentage (56.03%), followed by youth representatives (26.95%), women leaders (14.89%), persons with disabilities (1.42%) and ethnic minorities at 0.71%. *Badin is categorized as "very high" with a score of 0.84 on the indicator of provision of health facilities of connectedness index.*

Thatta: *Thatta is categorized as "medium" with a score of 0.44 on the indicator of provision of health facilities of connectedness index.* A considerable percentage of the respondents (52.08%) disagreed to the statement; while 43.75% of the respondents agreed and the remaining 4.17% of the respondents do not have any idea.
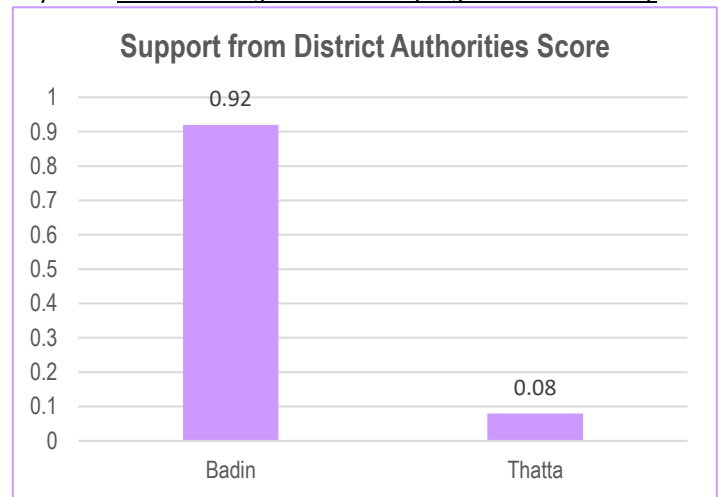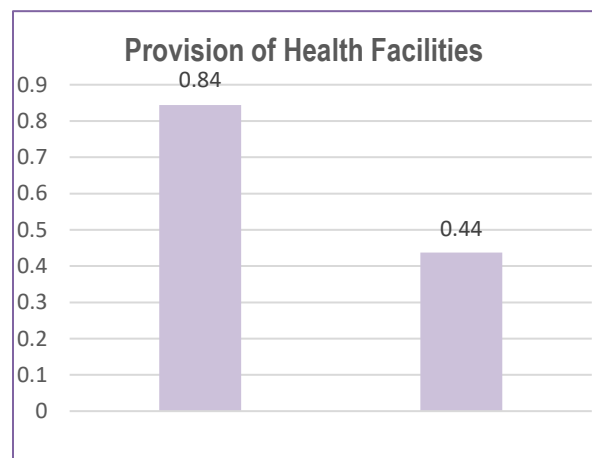

Figure 54: Provision of Health Facilities Score

5.   Weather forecast:

Badin: A large majority of the respondents (85.98%) reported that they seek updates and information about weather patterns from community forecast centers: 80.65% of the females and 92.96% of the males agreed to the statement. Of those who agreed, agricultural workers constitute the highest percentage (56.03%), followed by youth representatives (28.37%), women leaders (13.48%), persons with disabilities (1.42%) and ethnic minorities (0.71%). Only a small percentage of respondents (3.05%) stated otherwise, while the remaining (10.98%) do not have any idea about such centers. _Badin is categorized as "very high" with a score of 0.86 on the indicator of weather forecast updates of connectedness index._ 86.31% of the respondents stated that the community forecast centers communicate information in a timely manner.

Thatta: _Thatta is categorized as "very low" with a score of 0.0 on the indicator of weather forecast updates of connectedness index._ A large majority of the respondents (94.79%) reported that they do not seek updates and information about weather patterns from community forecast center.
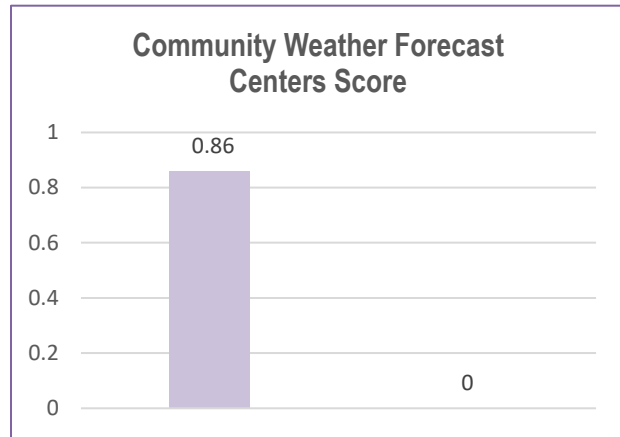

Figure 55: Community Weather Forecast Centers Score

6.   Early Warnings Application:

Badin: A large majority of the respondents (78.18%) reported that they have used the app for early warnings in case of a disaster: 72.83% of the females and 84.93% of the males agreed to the statement. A considerable percentage of respondents (21.82%) however stated otherwise. Of those who agreed, agricultural workers constitute the highest percentage (50.39%), followed by youth representatives (31.78%), women leaders (15.50%), persons with disabilities (1.55%) and ethnic minorities (0.78%). _Badin is categorized as "high" with a score of 0.78 on the indicator of early warnings app of connectedness index._ 88.55% of the respondents stated that using early warning app helped them in taking timely action.

Thatta: _Thatta is categorized as "very low" with a score of 0.0 on the indicator of early warnings app of connectedness index._ 100% of the respondents reported that they have not used any such app.
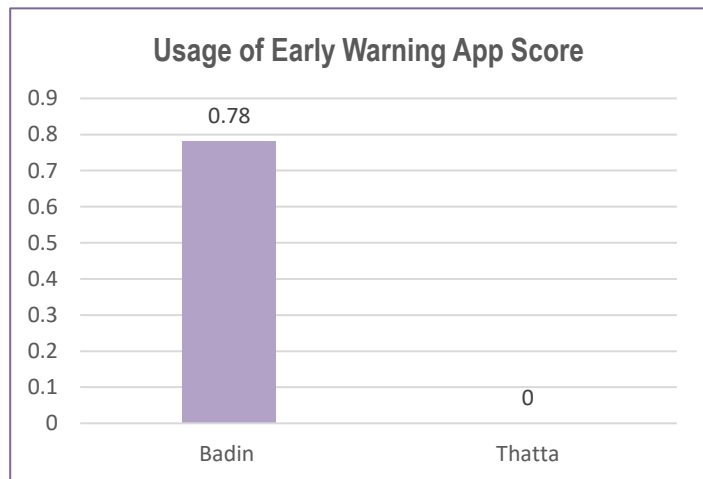

Figure 56: Usage of Early Warning App Score

7.   Resilience Academy:

Badin: A large majority of the respondents (70.41%) reported that they seek guidance from the resilience academy: 82.29% of the females and 54.79% of the males agreed to the statement. A considerable percentage of respondents (29.59%) however stated otherwise. Of those who agreed, agricultural workers constitute the highest percentage (54.62%), followed by youth representatives (25.21%), women leaders (17.65%), persons with disabilities (1.68%) and ethnic minorities (0.84%). _Badin is categorized as "high" with a score of 0.70 on the indicator of resilience building institute in the community of connectedness index._ 92.31% of the respondents stated that they were able to learn different coping mechanisms.

Thatta: _Thatta is categorized as "very low" with a score of 0.0 on the indicator of resilience building institute in the community of connectedness index._ 100% of the respondents reported that they do not seek guidance from any such academy.
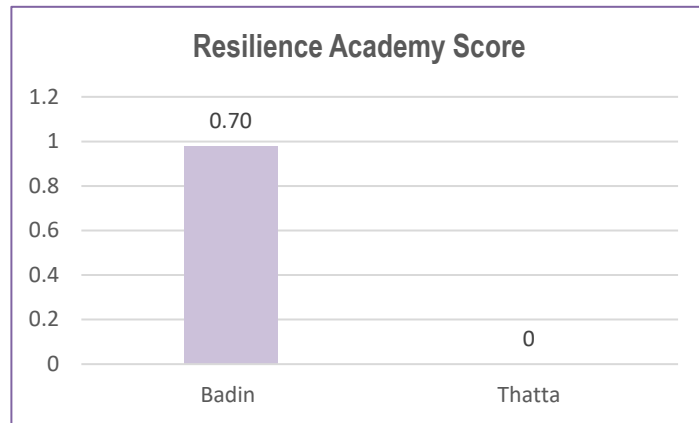

Figure 57: Resilience Academy Score

8.   Knowledge about Climate Smart Practices:

Badin: A large majority of the respondents (97.62%) reported that they have knowledge and information on modern climate smart practices: 95.79% of the females and 100% of the males agreed to the statement. A small percentage of respondents (2.38%) however stated otherwise. Of those who agreed, agricultural workers constitute the highest percentage (56.71%), followed by youth representatives (27.44%), women leaders (14.02%), persons with disabilities (1.22%) and ethnic minorities (0.61%). _Badin is categorized as "very high" with a score of 0.98 on the indicator of knowledge of climate smart practices of connectedness index._ 86.9% of the respondents stated that they are practicing planting trees in the community.

Thatta: _Thatta is categorized as "very low" with a score of 0.0 on the indicator of knowledge of climate smart practices of connectedness index._ 100% of the respondents reported that they do not have any information about climate smart practices. 85.42% of the respondents however stated that they are practicing planting trees in the community.
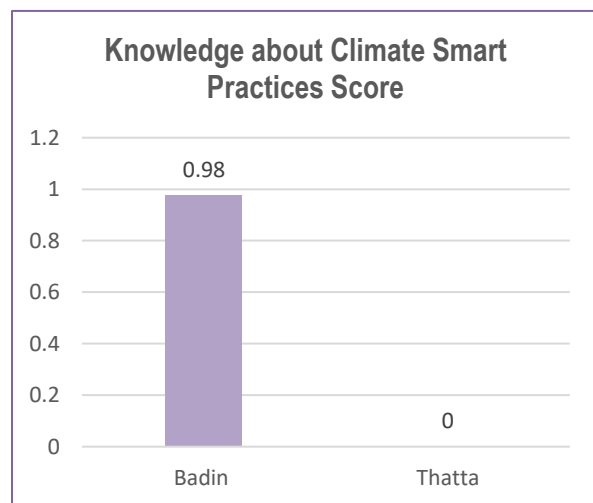

Figure 58: Knowledge about Climate Smart Practices Score

Snapshot of Connectedness Index

Indicators	Badin		Thatta	
Community works with government authorities	0.93	very high	0.07	very low
Community approaches relevant authorities	0.85	very high	0.07	very low
District authorities provide support	0.92	very high	0.08	very low
Partnerships reduced risk	0.93	very high	0.43	Medium
Village members keep in touch with DDMA	0.86	very high	0	very low
DDMA share DRR techniques	0.80	very high	0	very low
Village Committees reach out to relevant departments	0.80	very high	0.64	High
Provision of health facilities	0.84	very high	0.44	Medium
Updates from Community Forecast Center	0.86	very high	0	very low
Timely communication of information from the weather forecast center	0.86	very high	0	very low
Trainings conducted on the usage of early warning system	0.82	very high	0	very low
Early warnings helped in timely action	0.89	very high	0	very low
Guidance from Resilience Community	0.70	very high	0	very low
Knowledge and Information about Community Smart Practices	0.98	very high	0	very low
Tree Plantation	0.87	very high	0.85	High
Connectedness Index Score	**0.86**	**VERY HIGH**	**0.17**	**VERY LOW**

Table 7: Snapshot of Inclusivity Connectedness Index

Summary of Results:

Index	Badin		Thatta	
	Overall Score	*Resilience*	*Overall Score*	*Resilience*
Community Capacity Index	0.83	very high	0.30	low
Social Capital Index	0.95	very high	0.59	medium
Inclusivity Index	0.84	very high	0.42	medium
Connectedness Index	0.86	very high	0.17	very low

Table 8: Summary of Results

7. Recommendations

The project seems promising, not only with regard to approaches to deal with climate change adaptation for local vulnerable communities in Badin, but also in terms of results and possible replication and with regard to scaling up. Following is a list of lessons learned and recommendations that can be drawn-up based on the information available.

1. Water scarcity is a major problem in the district and neighboring areas which needs attention. In addition to skill building and information sharing on crops that require minimum water, it is pivotal that project may also focus on developing linkages with irrigation department for advocacy purposes to devise some concrete mechanisms and strategies for fair and efficient distribution of water to tackle the dearth of water resources. In addition to this, water reservoirs can be built for community where they can collect rainwater (when it rains) for agricultural needs.

2. Health and hygiene play an important role in improving health; at the village level, improved supply of drinking water and construction of toilets at the household level needs to be high priority in future programming. The area has minimal access to WASH facilities with very little knowledge of its significance among community members. The problem does not only add risk to health and hygiene but also an impediment for people with disabilities (PWDs), children and women. Community, either have access to, a communal temporary toilet setup or else they have to go outdoors in fields. In order to facilitate the vulnerable groups and to contribute to health of the community, introducing WASH facilities at household level will further help strengthen community capacity and will facilitate the target groups for the pressing needs faced by community.

3. Alternate livelihood approach remained one of the key successes of project. It does however show some areas of improvement especially related to financing, market linkages and financial management. Linkage development with market (buyers and suppliers) and continued sensitization on business management will be of help to target community groups who sometimes face related challenges. The capacity building aspect of financial management also needs to be strengthened so that people will learn on how to save from profit and invest back in business for continuation. Further to this, linking them with financial institutions which provide financing as seed money for businesses will help them with livelihood but also to run business in a more structured manner. Creating linkages for business and financial management and also with markets and local vendors will further help them with improves business skills and strategic planning.

4. Though the project has already created linkages with MFIs however there is a major barrier between MFIs and communities owing to interest factor. Owing to religious reasons, primarily, the communities tend to hesitate to take loans. There are opportunities available which provide interest free loans. Linking such options with these communities will further help them. It seems that people lack money thus tend to not to take initiatives even if they are skilled; such connections may help them take initiative and build on their skills.

5. The project has successfully diversified income generation activities and demonstrated enhanced crop productivity. As a way forward, emphasis can be given on the value addition of agriculture and non-agricultural products (handicrafts, embroidery, etc.) to enhance household income via building on the local craft skills.

6. Badin is primarily based on intergenerational occupation where farming is a prominent occupation taken up by community; in such situations, it is always imperative to develop skills in children using a child centered approach, by involving them in basic activities (e.g., demo plots, using technology, using knowledge resources, kitchen gardening etc.). Such initiatives help children order to equip them from an early age to understand the local, geographic and occupational landscape of their area. Involvement of children in appropriate initiatives will help them get sensitized and gain information on the local issues, plausible solutions and the relevant stakeholders. Investing in future generations will help in achieving sustainability and impact.

7. Ba Khabar Kissan application is the highlight of the project strategy. The results are promising and people are learning and stay informed on latest updates regarding farming and climate. The connection between community and the company needs to be further strengthened to find avenues for scaling this up by adding other important aspects to app as well as having a closer coordination through call centers. The linkage needs to be strengthened so that community continues to learn new things and keep building on their resources.

8. The availability of high-quality seed of crops is a major issue not just in Sindh but all over the country. In order to ensure increased yield, other than latest farming techniques, farmer may be provided with high quality seeds and establish a seed bank at local VDMC level. The farmers can be provided high quality seed for multiplication; VDMCs may ensure that the farmers who have received free high-quality seed return the same quantity to seed bank, established under VDMCs, free of cost for onward giving to other farmers.

9. In future planning, due attention needs to be paid to develop the communal infrastructure e.g. toilets, schools, shelters etc. Furthermore, communities can be engaged in the construction of infrastructure initiatives instead of engaging contractors in order to save costs and to enhance community ownership.

10. Considering the scenario of global pandemic, there is not much awareness among community and people are still oblivious of the possible repercussions of COVID 19. Despite a number of awareness raising initiatives around COVID19 prevention, there are misconceptions and poor adoption of SOPs. despite being part of project's trainings on the prevention of COVID 19. Keeping in view this situation, a focused attention to the health condition of the community will be of value.

11. Illiteracy is common in Badin. People don't know how to read and write which is a major impediment in teaching and imparting knowledge on improved and smart agricultural practices. Pictorial and illustration-based knowledge resources may be provided to each target group and community structure as a handy resource. These knowledge management resources will also help in achieving sustainability and thereby impact.