Research Paper

Research Title

The Role Of Climate Change Adaptation Group (CCAG) in building rural resilience to drought: A study under ECCCP-Drought Project

Submitted To

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Declaration

I, Somaiyaj Shamim Shamanta , declare that this report titled "The Role Of Climate Change Adaptation Group (CCAG) in building rural resilience to drought: A study under PKSF ECCCP-Drought Project" is an original work undertaken by me under the guidance and direct supervision of. My internship was conducted at the ECCP-Drought project of PKSF as a requirement for the completion of my BSS (Hons), in Social Science at East West University I confirm that:

1. The report presented is original and has been conducted by me in accordance with the ethical standards.
2. Any assistance received during the process has been acknowledged, and the work of others is cited and referenced.
3. I acknowledge that in accordance with PKSF regulations, any violation of academic integrity, such as plagiarism, may potentially lead to significant repercussions.

.....

(Somaiyaj Shamim Shamanta)

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List of Abbreviations

CCAG -climate Change Adaptation Group

PKSF - Palli Karma-Sahayak Foundation

ECCPA - Extended Community Climate Change Project–Adaptation

FGD -Focus Group Discussion

KII -Key Informant Interview

JRDM -Joypurhat Rural Development Movement

JAKAS -JAKAS Foundation

IGA -Income-Generating Activities

MAR -Managed Aquifer Recharge

MIS - Management Information System

SPSS -Statistical Package for the Social Sciences

LLA -Locally Led Adaptation

NGO -Non-Governmental Organization

Abstract

Climate change has intensified drought-related challenges in rural Bangladesh, creating serious impacts on agricultural production, water availability, household livelihoods, and food security. In drought-prone rural communities, limited access to resources, inadequate water management, and dependence on climate-sensitive agricultural activities increase household vulnerability. In this context, community-based adaptation initiatives such as Climate Change Adaptation Groups (CCAGs) can play an important role in strengthening the capacity of rural households to prepare for, cope with, and adapt to drought. Therefore, this study aims to examine the role of Climate Change Adaptation Groups in building rural resilience to drought under the PKSF ECCCP-Drought Project. The study focuses on how CCAG activities contribute to agricultural adaptation, water management, livelihood resilience, awareness, knowledge sharing, and community participation.

A mixed-methods research approach was followed to achieve the objectives of the study. Quantitative data were collected from 42 respondents through a structured questionnaire using purposive sampling. Qualitative information was collected through Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) to understand the experiences, perceptions, and challenges of community members. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed through thematic analysis.

The findings indicate that CCAGs have contributed positively to strengthening rural resilience to drought by increasing awareness, improving knowledge, encouraging adaptive practices, and promoting collective community action. The major contributions of CCAGs are reflected in the following areas:

1.Agriculture:

CCAG activities have supported farmers in adopting drought-tolerant crops, improved cultivation techniques, water-saving irrigation practices, vegetable cultivation, and other climate-resilient agricultural practices. These activities help reduce the negative effects of drought on agricultural production.

2. Water Management:

CCAG activities have contributed to improved water management in drought-prone communities through water conservation, efficient irrigation practices, and community-based water management initiatives. A notable intervention is Managed Aquifer Recharge (MAR), which supports the replenishment of groundwater by enhancing the infiltration and storage of available water. Such initiatives can improve groundwater availability during dry periods and help rural households manage increasing water scarcity. Through awareness, community participation, and practical water-management measures, CCAGs contribute to strengthening the capacity of communities to cope with drought-related water stress

3. Livelihood Resilience:

CCAG interventions have encouraged livelihood diversification through activities such as vegetable cultivation, livestock rearing, vermicomposting, and other income-generating activities. These opportunities can reduce households' dependence on drought-sensitive agriculture and strengthen their ability to cope with economic shocks caused by drought.

Overall, the study demonstrates that CCAGs can act as an effective community-based mechanism for building rural resilience to drought. Their contribution extends beyond awareness creation by supporting practical adaptation in agriculture, promoting better water management, strengthening livelihood opportunities, and encouraging collective participation. However, continued access to agricultural inputs, technical assistance, water facilities, financial resources, and livelihood support is necessary to ensure the long-term sustainability and effectiveness of CCAG interventions.

Chapter: One

1 .Introduction

Climate change has emerged as one of the most significant environmental and socio-economic challenges of the twenty-first century. Its consequences are particularly severe in developing countries such as Bangladesh, where rural livelihoods are closely dependent on agriculture, natural resources, and seasonal climatic conditions. Changes in temperature, rainfall patterns, and the increasing occurrence of prolonged dry periods are creating new challenges for rural communities. Among the different climate-related hazards, drought has become an important concern, particularly in the drought-prone regions of Bangladesh. It affects agricultural production, water availability, household income, food security, and the overall well-being of farming communities.

The impacts of drought are not limited to physical or environmental conditions. For rural households, particularly small and marginal farmers, repeated drought can reduce crop productivity, increase production costs, create water shortages, and weaken livelihood security. When these challenges continue over several seasons, households may face difficulties in recovering from previous losses and maintaining sustainable livelihoods. Therefore, building resilience to drought requires more than access to financial or physical resources. It also requires awareness, knowledge, skills, social cooperation, institutional support, and the capacity to make appropriate decisions in response to changing environmental conditions.

In this context, community-based adaptation has become an important approach to addressing climate-related challenges. Community-based adaptation recognizes local people as active participants in identifying risks, sharing knowledge, developing solutions, and implementing adaptation measures. Rural communities possess valuable practical knowledge regarding local environmental conditions, agricultural practices, water resources, and traditional coping mechanisms. When this local knowledge is supported by technical information, training, and institutional assistance, communities can become better equipped to respond to climate-related risks.

Climate Change Adaptation Groups (CCAGs) provide a community-level platform through which such participation and collective action can take place. CCAGs bring together local farmers and community members to discuss climate-related challenges, exchange experiences, participate in awareness and capacity-building activities, and identify suitable

adaptation practices. Through regular interaction, members can strengthen their understanding of climate risks while developing opportunities for collective learning and decision-making.

The Palli Karma-Sahayak Foundation (PKSF), through the Extended Community Climate Change Project–Adaptation (ECCPA) Drought Project, has adopted this community-based approach by establishing CCAGs in drought-prone areas. The groups are involved in activities such as awareness building, training, knowledge sharing, climate-smart agricultural practices, and collective action. These activities are intended to strengthen the adaptive capacity of rural communities and support locally appropriate responses to drought.

The present study, titled "The Role of Climate Change Adaptation Groups in Building Rural Resilience to Drought," focuses on understanding how CCAG participation contributes to the capacity of rural farming communities to cope with and adapt to drought. Particular attention is given to climate change awareness, knowledge sharing, participation, collective decision-making, adaptive capacity, and the adoption of climate-resilient practices. From a sociological perspective, the study also considers how social cooperation and community participation influence the ability of rural people to respond collectively to environmental challenges.

1.1 Background of the Study

Bangladesh is highly vulnerable to the impacts of climate change, and rural communities are among those most exposed because of their strong dependence on agriculture and natural resources. In many drought-prone areas, irregular rainfall, rising temperatures, prolonged dry periods, and declining water availability create significant challenges for agricultural production and rural livelihoods. Drought can reduce crop yields, increase farming costs, affect household income, and create pressure on food and water security. These impacts are particularly challenging for small and marginal farmers who often have limited resources to manage repeated climatic shocks.

The growing complexity of drought-related challenges has increased the importance of strengthening community capacity for adaptation. Although individual households develop different coping strategies, many climate-related problems cannot be addressed effectively at the household level alone. Access to climate information, technical knowledge, training, agricultural resources, and collective support can significantly influence how communities

respond to drought. Therefore, community-based approaches have gained importance because they provide opportunities for local people to identify shared problems, exchange experiences, and develop responses that reflect their own environmental and socio-economic realities.

Within this context, the Climate Change Adaptation Group (CCAG) initiative under the Extended Community Climate Change Project–Adaptation (ECCPA) Drought Project of the Palli Karma-Sahayak Foundation (PKSF) represents an organized approach to strengthening community-level adaptation. CCAGs provide a structured platform where farmers and other community members can participate in activities related to climate change awareness, capacity development, knowledge sharing, training, and collective action. The approach encourages community members to understand drought-related risks and explore adaptation measures that are appropriate to their local circumstances.

The activities of CCAGs are particularly relevant to drought-prone communities because effective adaptation requires both knowledge and collective capacity. Through training and awareness activities, farmers can gain information about climate change, drought risks, water management, and climate-resilient agricultural practices. At the same time, group discussions allow members to share their own experiences and learn from one another. Such knowledge exchange can help transform individual experiences into collective learning and may improve the ability of farmers to make informed decisions regarding agricultural and livelihood activities.

The concept of rural resilience provides an important framework for understanding the potential contribution of CCAGs. Rural resilience refers to the capacity of households and communities to withstand, adapt to, and recover from environmental and socio-economic shocks while maintaining their livelihoods and well-being. In relation to drought, resilience includes the ability to anticipate risks, manage limited resources, adjust agricultural practices, reduce potential losses, and recover from adverse impacts. These capacities are influenced not only by economic resources but also by awareness, social networks, participation, knowledge, institutional support, and collective action.

The CCAG approach is also connected with the principles of Locally Led Adaptation (LLA), which emphasize the active involvement of local communities in identifying risks, setting

priorities, making decisions, and implementing adaptation actions. By creating opportunities for local participation and collective decision-making, CCAGs can strengthen community ownership and encourage people to become active actors in the adaptation process rather than passive beneficiaries.

However, the existence of CCAGs alone does not necessarily guarantee stronger rural resilience. Their contribution may depend on the level of participation, the usefulness of training and information, members' ability to apply acquired knowledge, and the extent to which collective discussions lead to practical adaptation actions. Therefore, examining the experiences and participation of CCAG members is essential to understand their actual contribution to drought resilience.

Against this background, the present study focuses on the role of CCAGs in building rural resilience to drought. It particularly examines how participation in CCAG activities influences climate change awareness, adaptive capacity, knowledge sharing, community participation, collective decision-making, and the adoption of climate-resilient practices. The study therefore seeks to provide a sociological understanding of how community-based institutions can strengthen local capacity and support more sustainable and locally led responses to recurring drought in rural Bangladesh.

1.2 Problem Statement

Climate change has become an increasing threat to rural communities in Bangladesh, particularly those whose livelihoods depend heavily on agriculture and natural resources. Among the various climate-related hazards, drought has emerged as a major challenge in several rural and drought-prone areas of the country. Changes in rainfall patterns, rising temperatures, prolonged dry spells, and reduced water availability can seriously affect agricultural production and rural livelihoods. For farming households that depend mainly on

agriculture for their income and food security, repeated drought conditions may result in crop losses, declining household income, increased production costs, water scarcity, and greater livelihood insecurity. The continuous exposure to such climatic stresses can reduce the ability of rural households to cope with future shocks and may weaken their long-term resilience.

Building rural resilience to drought therefore requires more than short-term responses to individual drought events. It requires strengthening the ability of individuals, households, and communities to anticipate risks, make appropriate decisions, adopt suitable adaptation practices, and recover from climate-related losses. In this process, community participation and collective action can play an important role. Rural communities often possess valuable local knowledge and experience regarding environmental changes, agricultural practices, water management, and coping strategies. However, individual households may have limited resources and opportunities to respond effectively to increasingly complex climate risks. Community-based institutions can help bring people together, facilitate knowledge sharing, strengthen social cooperation, and create opportunities for collective responses to common challenges.

Climate Change Adaptation Groups (CCAGs) have been established as a community-based mechanism to support local communities in addressing climate-related challenges. Through group activities, farmers and community members can participate in awareness-building activities, training, knowledge sharing, collective discussions, and decision-making related to climate change adaptation. CCAGs are also intended to encourage the adoption of climate-resilient and locally appropriate agricultural practices. In this way, these groups have the potential to contribute to different dimensions of rural resilience, including climate change awareness, adaptive capacity, participation, collective decision-making, social cooperation, and the ability to adopt appropriate adaptation practices.

The role of CCAGs is particularly important in drought-prone communities because drought-related challenges often affect not only agricultural production but also household livelihoods, food security, water availability, and economic stability. If community members are able to identify drought-related risks at an early stage, access relevant information, share their experiences, and collectively discuss appropriate responses, they may become better prepared to manage the impacts of drought. Similarly, participation in training and awareness activities

may help farmers improve their knowledge of climate-resilient agricultural practices and make more informed decisions regarding their livelihoods. Therefore, CCAGs may serve as an important platform through which individual adaptive capacity and collective community resilience can be strengthened.

The issue can also be understood from the perspective of Locally Led Adaptation (LLA) , which emphasizes the active involvement of local communities in identifying climate risks, setting priorities, making decisions, and implementing adaptation actions. Local people are not merely recipients of adaptation interventions; they possess knowledge, experience, and understanding of the environmental and social conditions of their own communities. CCAGs can provide a practical platform for incorporating this local knowledge and participation into adaptation processes. By encouraging community members to participate in discussions, share experiences, identify local problems, and collectively determine appropriate responses, CCAGs can contribute to greater local ownership and more context-specific adaptation. Therefore, examining the role of CCAGs is also important for understanding how community-level institutions can support locally led approaches to building resilience to drought.

Previous studies have examined various aspects of climate change adaptation in Bangladesh, including farmers' adaptation practices, livelihood vulnerability, community-based adaptation, social capital, institutional support, and rural resilience. These studies have provided valuable knowledge about how rural households and communities respond to climate-related risks. However, relatively limited attention has been given to the specific role of organized Climate Change Adaptation Groups in strengthening rural resilience to drought. In particular, there is insufficient empirical evidence regarding how participation in CCAG activities influences farmers' climate change awareness, adaptive capacity, collective participation, decision-making processes, knowledge sharing, and adoption of drought-resilient agricultural practices.

Furthermore, the existence of CCAGs does not necessarily mean that they automatically strengthen rural resilience. Their effectiveness may depend on the level of community participation, the relevance of the knowledge and training provided, the ability of members to apply learned practices, and the extent to which collective decisions lead to practical adaptation actions. It is therefore important to examine how community members actually

participate in CCAG activities and whether such participation contributes to meaningful changes in their ability to deal with drought-related risks. Understanding these issues can help determine whether CCAGs are functioning effectively as community-based institutions for strengthening adaptive capacity and resilience.

There is also a need to examine the specific contribution of CCAGs under the ECCCP-Drought Project in relation to rural resilience. Although the groups are designed to promote awareness, capacity development, knowledge sharing, participation, and climate-resilient practices, the extent to which these activities contribute to strengthening the resilience of farming households remains insufficiently understood. The lack of empirical evidence creates a knowledge gap concerning the relationship between CCAG participation and important dimensions of rural resilience. In particular, it remains necessary to understand whether CCAGs help farmers become more aware of climate risks, increase their capacity to adapt, participate more actively in community decision-making, and adopt appropriate practices for managing drought.

From a sociological perspective, this knowledge gap is significant because resilience to drought is not determined only by economic resources or agricultural technologies. Social relationships, community participation, collective action, local institutions, knowledge exchange, and decision-making processes also influence how communities respond to environmental challenges. CCAGs provide an opportunity to examine these social dimensions of climate adaptation and to understand how collective participation can contribute to strengthening the capacity of vulnerable rural communities. Studying the role of CCAGs can therefore provide insights into how local institutions and community-level social processes support rural resilience in the face of recurring drought.

Therefore, there is a clear need for a focused study on the role of Climate Change Adaptation Groups in building rural resilience to drought. This study seeks to address the existing knowledge gap by examining how CCAGs contribute to strengthening farmers' adaptive capacity, climate change awareness, community participation, collective decision-making, knowledge sharing, and adoption of climate-resilient practices. By exploring these dimensions, the study aims to provide a better understanding of the contribution of CCAGs to rural resilience and the potential of community-based and locally led adaptation approaches

in drought-prone areas of Bangladesh. The findings may also provide useful insights for strengthening future community-based climate adaptation initiatives and improving the effectiveness of locally led efforts to build sustainable rural resilience to drought.

1.3 Research Questions

The present study aims to understand the role of Climate Change Adaptation Groups (CCAGs) in strengthening rural resilience to drought. Based on the research problem and objectives, the study will address the following research questions:

- How does participation in Climate Change Adaptation Groups (CCAGs) affect collective decision-making and community-based drought adaptation?
- What strategies can strengthen the effectiveness of CCAGs in building sustainable rural resilience to drought?
- To what extent do CCAG activities contribute to improving livelihood resilience among rural households during drought?
- 4.What are the unique contributions of Climate Change Adaptation Groups (CCAGs) in building rural resilience to drought under the PKSF ECCCP-Drought Project?

These questions are designed to explore both the social and practical dimensions of CCAG activities. The study will examine how participation, collective decision-making, adaptation practices, and livelihood support are connected with the ability of rural communities to cope with drought.

1.4 Research Objectives

Broad objective

The general objective of this study is to analyze how Climate Change Adaptation Groups (CCAGs) contribute to building rural resilience against drought. The study focuses on understanding how community-based groups help rural people prepare for, cope with, and adapt to drought-related challenges.

Specific Objectives

The specific objectives of the study are:

- To examine the level of community participation in CCAG activities and its influence on rural drought resilience.
- To identify the local adaptation strategies promoted by CCAGs to reduce drought-related risks and vulnerabilities.
- To assess the contribution of CCAG activities to improving livelihood resilience among drought-affected rural households.
- To examine the role of CCAGs in promoting collective decision-making and community-based adaptation practices.
- To explore how CCAGs increase community awareness and knowledge regarding drought and climate change adaptation.
- To identify the major challenges faced by CCAG members in implementing drought adaptation activities.
- To explore strategies that can improve the effectiveness and sustainability of CCAGs in building long-term rural resilience to drought.

1.5 Hypothesis

The primary hypothesis of this study is:

“Active participation in local climate adaptation networks significantly enhances community awareness of drought, which in turn accelerates the adoption of drought-mitigating behaviors and strengthens long-term climate resilience.”

The hypothesis assumes that greater involvement in CCAG activities provides rural people with increased access to climate-related information, local knowledge, training, and opportunities for collective action. As community members become more aware of drought

risks, they may be more likely to adopt appropriate adaptation practices and participate in collective activities. Increased participation and awareness are therefore expected to contribute to stronger adaptive capacity and improved rural resilience.

The study will examine whether this relationship can be observed among the selected rural households and CCAG members.

Chapter: Two

2 . Literature Review

Climate change has become one of the major challenges affecting rural communities, particularly in developing countries where people depend heavily on agriculture and natural resources for their livelihoods. Bangladesh is highly vulnerable to climate change because of its geographical location, dependence on agriculture, and exposure to different climate-related hazards. Rural communities experience the impacts of drought, floods, salinity, irregular

rainfall, and increasing temperatures. Among these hazards, drought has become a serious concern in many parts of Bangladesh, particularly in the northwestern and drought-prone areas. Drought can reduce crop production, create water shortages, increase agricultural costs, and threaten household income and food security. As a result, climate change adaptation and rural resilience have become important areas of research.

Rural resilience refers to the ability of individuals, households, and communities to prepare for, cope with, recover from, and adapt to environmental and socio-economic shocks. In the context of climate change, resilience is not limited to recovering from a disaster; it also involves developing the capacity to anticipate future risks and adjust livelihood strategies accordingly. Previous studies have emphasized that rural resilience depends on several factors, including access to resources, knowledge, technology, social networks, livelihood opportunities, and institutional support. Therefore, strengthening resilience requires both physical adaptation measures and social participation at the community level.

Community-based adaptation has received increasing attention because it places local people at the centre of climate adaptation activities. Instead of considering rural people only as beneficiaries, community-based adaptation recognizes them as active participants who possess valuable local knowledge and experience. Arfanuzzaman et al. reported that ecosystem-based adaptation practices, including drought- and saline-tolerant crop varieties, rainwater harvesting, and improved natural resource management, can improve farmers' adaptive capacity and strengthen agricultural resilience. These practices can help farmers reduce the negative effects of changing climatic conditions and maintain agricultural production. The findings suggest that adaptation becomes more effective when local communities have access to appropriate knowledge, resources, and technologies.

Community participation is another important element of climate change adaptation. Ahmed (2017) emphasized that community participation plays a significant role in improving resilience by strengthening livelihoods, food security, and social cooperation. When community members participate in identifying problems and developing solutions, adaptation activities are more likely to reflect local needs and priorities. Participation can also develop trust, cooperation, and collective responsibility among community members. These social relationships are important because climate-related problems often affect entire communities

rather than individual households. Therefore, collective participation can increase the ability of rural people to respond to common environmental challenges.

Similarly, Chowdhooree et al. (2020) argued that effective climate adaptation requires meaningful participation and empowerment of local communities. Their study highlighted that adaptation initiatives become more sustainable when local people are involved in planning, decision-making, implementation, and monitoring. Community empowerment can also create a sense of ownership among local people. When people feel that they are actively involved in adaptation activities, they are more likely to continue those practices in the future. This idea is particularly relevant to community-based groups because such groups can provide a platform for local people to discuss problems, exchange knowledge, and make collective decisions about climate-related risks.

Local institutions also have an important role in building climate resilience. Karim (2017) found that local institutions can contribute to climate adaptation by promoting collective action, improving resource management, and supporting better farming practices. Strong local institutions can connect rural households with information, technical assistance, livelihood opportunities, and other support services. They can also facilitate cooperation among community members during periods of environmental stress. From a sociological perspective, local institutions are important because they strengthen social networks, trust, cooperation, and collective action. Therefore, community-level institutions can play an important role in increasing the adaptive capacity of rural households.

Several studies have also examined the relationship between climate adaptation and livelihood security. Singh and Chudasama (2017) demonstrated that climate adaptation practices can help vulnerable communities cope with climate-related shocks and reduce livelihood risks. Adaptation strategies can enable households to maintain their productive activities and income sources even under changing environmental conditions. Similarly, Ali and Erenstein (2017) showed that climate adaptation practices can reduce the negative impacts of drought by improving livelihood security, food security, and farmers' adaptive capacity. These findings indicate that climate adaptation is not only an environmental issue but also a livelihood and social issue. The ability of rural households to adapt depends on their economic resources, knowledge, social networks, and access to institutional support.

Agriculture is especially important in relation to drought resilience because drought directly affects crop production and farming livelihoods. Farmers may experience reduced yields, increased irrigation costs, water scarcity, and loss of income. Therefore, drought-resilient agricultural practices can help reduce rural vulnerability. Practices such as drought-tolerant crop varieties, efficient irrigation, water conservation, crop diversification, improved farming methods, and alternative livelihood activities can increase farmers' ability to cope with drought. However, the adoption of these practices is often influenced by access to information, financial resources, extension services, education, and community support. This suggests that technical solutions alone may not be sufficient; social and institutional support is also necessary.

Community-based groups can provide an important mechanism for connecting adaptation practices with local participation. Through regular meetings and group activities, community members can share experiences, discuss problems, access information, and develop collective strategies. Such groups can strengthen social capital by creating relationships based on trust, cooperation, reciprocity, and collective responsibility. They may also help vulnerable households access project services and improve their awareness of climate risks. From a sociological perspective, these group-based interactions are important because they can strengthen people's sense of belonging and collective capacity to respond to climate-related challenges.

The experience of the ECCCP-Flood project provides an important example of community-based climate adaptation in Bangladesh. The project promoted adaptation through Climate Change Adaptation Groups (CCAGs), climate-smart agriculture, and flood-resilient infrastructure. It contributed to strengthening the resilience of flood-prone communities by improving their ability to prepare for and respond to climate-related impacts. The project also supported access to safe water, sanitation, and livelihood opportunities, helping vulnerable households cope with environmental challenges. This experience demonstrates that organized community groups can play an important role in implementing adaptation activities and strengthening local resilience.

Climate Change Adaptation Groups (CCAGs) are therefore particularly relevant for understanding community-based climate resilience. CCAGs can create a platform where rural

people can learn about climate risks, share local knowledge, participate in adaptation activities, and make collective decisions. They can also encourage members to adopt climate-resilient agricultural practices and improve preparedness for drought and other climate hazards. In addition, CCAGs can strengthen communication between community members and development organizations, allowing local needs and experiences to be considered in project activities. Their role can therefore extend beyond implementing adaptation practices to strengthening participation, empowerment, social cooperation, and collective decision-making.

Despite the growing literature on climate change adaptation and rural resilience, there is still a research gap regarding the specific role of Climate Change Adaptation Groups in building resilience to drought. Previous studies have mainly focused on adaptation practices, local institutions, livelihood strategies, agricultural technologies, or community participation in a broader context. Comparatively fewer studies have examined how CCAGs influence the adaptive capacity, participation, collective decision-making, and drought-resilient practices of rural households. There is also limited empirical evidence on how participation in such groups contributes to long-term livelihood resilience in drought-prone communities.

Therefore, the present study focuses on “The Role of Climate Change Adaptation Groups in Building Rural Resilience to Drought.” The study seeks to examine how CCAGs contribute to strengthening the adaptive capacity of rural households, promoting community participation, supporting collective decision-making, encouraging drought-resilient agricultural practices, and improving livelihood resilience. By examining the experiences and perceptions of rural community members, this study aims to provide empirical evidence regarding the contribution of CCAGs to drought adaptation. The findings may contribute to a better understanding of community-based climate adaptation from a sociological perspective and provide useful insights for development organizations and policymakers working to strengthen rural resilience in drought-prone areas of Bangladesh.

Chapter: Three

3. Methodology

3.1 Research Design

This study will adopt a mixed-methods research design, combining both quantitative and qualitative approaches to comprehensively examine the role of Climate Change Adaptation Groups (CCAGs) in building rural resilience to drought.

The quantitative approach will be used to collect measurable information from rural households and CCAG participants. A structured questionnaire will be used to collect data regarding respondents' socio-economic characteristics, awareness of drought, participation in CCAG activities, access to information and training, adoption of drought adaptation practices, livelihood conditions, and perceptions of community resilience. Quantitative data will help identify patterns, relationships, frequencies, and percentages related to CCAG participation and drought resilience.

The qualitative approach will be used to understand the experiences, perceptions, opinions, and social realities of community members. Qualitative information will provide a deeper understanding of how CCAGs operate at the local level, how members participate in decision-making, how adaptation strategies are developed, and what challenges communities face during drought. Focus Group Discussions (FGDs) will be used to collect qualitative information and understand the collective experiences of community members.

The combination of quantitative and qualitative methods will allow the study to examine the research problem from different perspectives. Quantitative findings will provide measurable evidence, while qualitative findings will help explain the reasons and social processes behind those findings. Therefore, the mixed-methods approach is considered for understanding both the measurable outcomes and the social dimensions of CCAG activities.

The quantitative data will be analyzed using descriptive statistical techniques such as frequency, percentage, mean, and cross-tabulation, where appropriate. Qualitative information will be organized and analyzed thematically by identifying major themes related to participation, decision-making, adaptation strategies, livelihood resilience, challenges, and community empowerment.

3.2 Study Area

The research will be conducted in selected drought-prone areas of Bangladesh, particularly Rajshahi(two upzillas), Naogaon(all Upzillas), and Chapainawabganj(Three Upzillas), where rural communities are significantly affected by drought and where Climate Change Adaptation Groups (CCAGs) have been established under the PKSF climate adaptation initiatives.

I am work in the Naogaon district,But I am also follow up the just 2 Upzillas fewof the village. Also I saw how people survive their life.These areas have been selected because agriculture is an important source of livelihood for rural households, while recurrent drought, irregular rainfall, high temperatures, and water scarcity create significant challenges for agricultural production and household livelihoods. Farmers in these areas may experience difficulties related to irrigation, crop production, livestock management, household income, and access to sufficient water during dry periods.

The selected study areas are also relevant because CCAGs provide a community-level platform through which local people can participate in climate adaptation activities. Members can share information, discuss local climate-related problems, participate in awareness-building activities, and promote appropriate adaptation practices. Therefore, studying these areas provides an opportunity to understand whether and how community-based groups contribute to strengthening rural resilience.

The study will focus particularly on selected villages and CCAG members within these drought-prone locations. The respondents will include rural households and community members who have experience with or exposure to CCAG activities. Information from these respondents will help the researcher understand their level of participation, awareness of drought, adoption of adaptation practices, involvement in collective decision-making, and changes in livelihood resilience.

The selection of Rajshahi, Naogaon, and Chapainawabganj will therefore provide a suitable geographical and social context for examining the relationship between community participation and drought resilience. By focusing on these areas, the study aims to generate practical evidence about how CCAGs function at the grassroots level and how community-based adaptation can support vulnerable rural households in coping with drought.

3.3. Data Sources

The study will use both primary and secondary data to examine the role of Climate Change Adaptation Groups (CCAGs) in building rural resilience to drought. Primary data will be collected through a questionnaire survey, Focus Group Discussions (FGDs), and Key

Informant Interviews (KIIs). Secondary data will be collected from relevant project reports, organizational documents, research articles, books, journals, and other relevant sources.

Questionnaire Survey

A structured questionnaire survey was conducted among 41 selected CCAG members/farmers to collect quantitative data. The questionnaire focused on respondents' participation in CCAG activities, awareness of drought adaptation practices, adoption of climate-resilient agricultural practices, access to information and support, and perceptions regarding household and community resilience to drought. The survey data provide measurable evidence of the contribution of CCAGs to strengthening the adaptive capacity and resilience of rural households.

Focus Group Discussion (FGD)

A total of 4 Focus Group Discussions (FGDs) were conducted with CCAG members to gain an in-depth understanding of their collective experiences, perceptions, challenges, and adaptation practices related to drought. The discussions explored how CCAGs facilitate community participation, knowledge sharing, awareness building, mutual support, and collective action in responding to drought-related challenges. The FGDs also helped identify the experiences and perspectives that may not be fully captured through the structured questionnaire survey.

Key Informant Interview (KII)

A total of 4 experience regarding CCAG activities and drought adaptation initiatives. The key informants included relevant project personnel, field-level facilitators, and community representatives/leaders. The KIIs provided detailed qualitative insights into the implementation and functioning of CCAGs, their role in strengthening rural resilience to drought, community participation, and the challenges and opportunities associated with community-based climate change adaptation

Data collect Method	Sample Member	Remarks
KII	4	JRDM -2

		JAKAS Foundation-2
FGD	4	600 CCAG (Group)
Survey	41	15000 Members

Secondary Data

Secondary data were collected from relevant organizational and project documents, including project reports, publications, research articles, books, journals, and other reliable sources related to climate change, drought adaptation, rural resilience, and community-based adaptation. These sources were used to develop the conceptual and theoretical understanding of the study and to support the interpretation of the primary findings.

3.4Sampling Technique

The study employed a purposive sampling technique to select participants who had direct involvement, knowledge, and experience related to Climate Change Adaptation Groups (CCAGs) and drought adaptation activities. Purposive sampling was considered appropriate for this study because the research specifically aimed to understand the role of CCAGs in building rural resilience to drought. Therefore, participants were selected based on their relevance to the research topic, involvement in CCAG activities, and experience of drought and climate change adaptation practices.

Under the PKSF ECCCP-Drought Project, approximately 15,000 CCAG members are organized into 600 groups across 18 upzilas . As the total population of CCAG members is large and it was not feasible to collect information from all members within the available time and resources, a manageable number of participants were purposively selected from the study area. The selection focused on farmers and CCAG members who had sufficient experience with drought-related problems and CCAG activities and were willing to share their experiences and opinions.

For the quantitative component, a total of 41 farmers/CCAG members were selected for the structured questionnaire survey. The respondents were selected based on their participation in CCAG activities and their exposure to drought-related challenges and adaptation practices.

For the qualitative component, 4 Focus Group Discussions (FGDs) were conducted with CCAG members. Participants were selected purposively to ensure that the discussions included individuals with relevant experiences and knowledge of CCAG activities, community participation, drought adaptation, and local coping practices.

In addition, 4 Key Informant Interviews (KIIs) were conducted with individuals who had practical and organizational knowledge of CCAG activities and drought adaptation initiatives. These key informants included relevant project staff, field-level facilitators, CCAG leaders, and community representatives. Their experiences and perspectives helped the researcher understand the functioning of CCAGs from an institutional and community-level perspective.

Thus, the study included 41 questionnaire respondents, 4 FGDs, and 4 KIIs. The purposive selection of participants helped ensure that the collected information was relevant to the research objectives and provided meaningful insights into how CCAGs contribute to rural resilience to drought. Purposive sampling is particularly useful when researchers need participants who are knowledgeable about or experienced with the phenomenon being studied.

3.5 Data Collection

Data collection was conducted using both quantitative and qualitative methods to develop a comprehensive understanding of the role of Climate Change Adaptation Groups in building rural resilience to drought. The use of multiple data collection methods allowed the researcher to examine the research issue from different perspectives and compare information obtained from farmers, CCAG members, and key informants.

Questionnaire Survey

For the quantitative component of the study, a structured questionnaire was used to collect data from 41 farmers/CCAG members. The questionnaire was designed according to the objectives of the study and included questions related to respondents' socio-economic background, experiences of drought, participation in CCAG activities, awareness of drought adaptation measures, adoption of climate-resilient agricultural practices, access to information and support services, and perceptions of rural resilience.

The questionnaire also focused on how participation in CCAG activities influenced farmers' knowledge, awareness, preparedness, decision-making, and ability to respond to drought-related challenges. The quantitative information collected through the survey provided measurable evidence regarding the contribution of CCAGs to strengthening household and community resilience.

Focus Group Discussion (FGD)

A total of 4 Focus Group Discussions (FGDs) were conducted with CCAG members to obtain detailed qualitative information about their collective experiences and perceptions. The FGDs provided an opportunity for participants to discuss drought-related problems, local adaptation practices, community-level responses, and their experiences of participating in CCAG activities.

The discussions explored several important areas, including community participation, knowledge sharing, collective action, awareness building, mutual support, local coping strategies, agricultural adaptation practices, challenges faced by farmers, and the role of CCAGs in strengthening social cohesion and resilience.

The FGDs were particularly useful for understanding issues that could not be fully captured through structured questionnaires. Participants were able to describe their experiences in their own words and explain how CCAG activities affected their ability to respond to drought. The qualitative approach therefore added depth and context to the quantitative findings.

Key Informant Interview (KII)

A total of 4 Key Informant Interviews (KIIs) were conducted with individuals who possessed relevant knowledge and practical experience regarding CCAG activities and drought adaptation initiatives. The key informants included project staff, field-level facilitators, CCAG leaders, and community representatives.

The KIIs focused on the formation and functioning of CCAGs, community participation, leadership, decision-making, awareness-building activities, institutional support, implementation challenges, and the effectiveness of CCAG interventions in improving drought resilience.

The information obtained from the KIIs helped the researcher understand the implementation process from a broader perspective. It also provided information about the challenges faced by CCAGs, the support provided by project stakeholders, and the opportunities for strengthening community-based adaptation initiatives.

3.6 Data Analysis

The collected data were analyzed using both quantitative and qualitative data analysis techniques. The quantitative data obtained from the questionnaire survey were analyzed separately from the qualitative information obtained through the FGDs and KIIs. The findings were then compared and integrated to develop an overall understanding of the role of CCAGs in building rural resilience to drought.

Quantitative Data Analysis

The data collected from the 41 questionnaire respondents were checked, organized, coded, and entered into the Statistical Package for the Social Sciences (SPSS) for analysis. Descriptive statistical techniques were mainly used to analyze the survey data.

The analysis included frequencies, percentages, means, and standard deviations, where appropriate. These techniques were used to summarize respondents' socio-economic characteristics, their level of participation in CCAG activities, awareness of drought adaptation practices, adoption of climate-resilient agricultural practices, access to information and support, and perceptions regarding the contribution of CCAGs to rural resilience.

The quantitative findings were presented using tables, charts, and graphs to make the results clear and easy to interpret. Percentages were particularly useful for comparing respondents' responses and identifying major patterns within the collected data.

Qualitative Data Analysis

The qualitative information obtained from the 4 FGDs and 4 KIIs was analyzed using thematic analysis. The responses were carefully reviewed and organized according to the research objectives. Similar ideas and responses were grouped together and developed into major themes and sub-themes.

The main themes included drought experiences, community participation, knowledge and awareness, collective action, adaptation practices, social support, institutional support, challenges, decision-making, and the contribution of CCAGs to rural resilience.

Thematic analysis helped the researcher identify common experiences and important differences among participants. It also provided a deeper understanding of how CCAG members perceive their participation and how community-based activities influence their capacity to deal with drought. Thematic analysis is widely used in mixed-method studies to systematically identify and interpret patterns within qualitative data.

3.7 Ethical Considerations

Ethical considerations were maintained throughout the data collection and research process. Before collecting information, the researcher explained the purpose and objectives of the study to the participants. The participants were informed that their participation was voluntary and that they could choose not to answer any question or withdraw from the discussion if they felt uncomfortable. Informed consent was obtained from the participants before conducting the questionnaire surveys, FGDs, and KIIs. The researcher maintained respectful communication with all participants and avoided collecting unnecessary personal information. The confidentiality and anonymity of the respondents were also maintained. The information collected from participants was used only for academic and internship report purposes. Participants' personal identities and sensitive information were not disclosed in the report. The findings were presented in a way that protected the privacy and dignity of the participants.

The researcher also attempted to present the participants' responses accurately and objectively without intentionally changing or misrepresenting their views. Ethical practices were followed throughout the data collection, analysis, and reporting process to maintain the credibility and integrity of the study.

Chapter: Four

4.Findings and Discussion

4.1 Survey Findings

This section presents the survey findings in graphical form. Each figure contains the response percentages and is followed by a concise explanation suitable for the Findings/Data Analysis section of an internship report.

Figure 1 — Gender

Explanation: The figure shows us gender distribution of the respondents. The largest group is Female, representing 68.3% (28 respondents). We Can see the female respondents form the majority of the survey. Another side we can see the Male respondent are 31.7%.Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views.

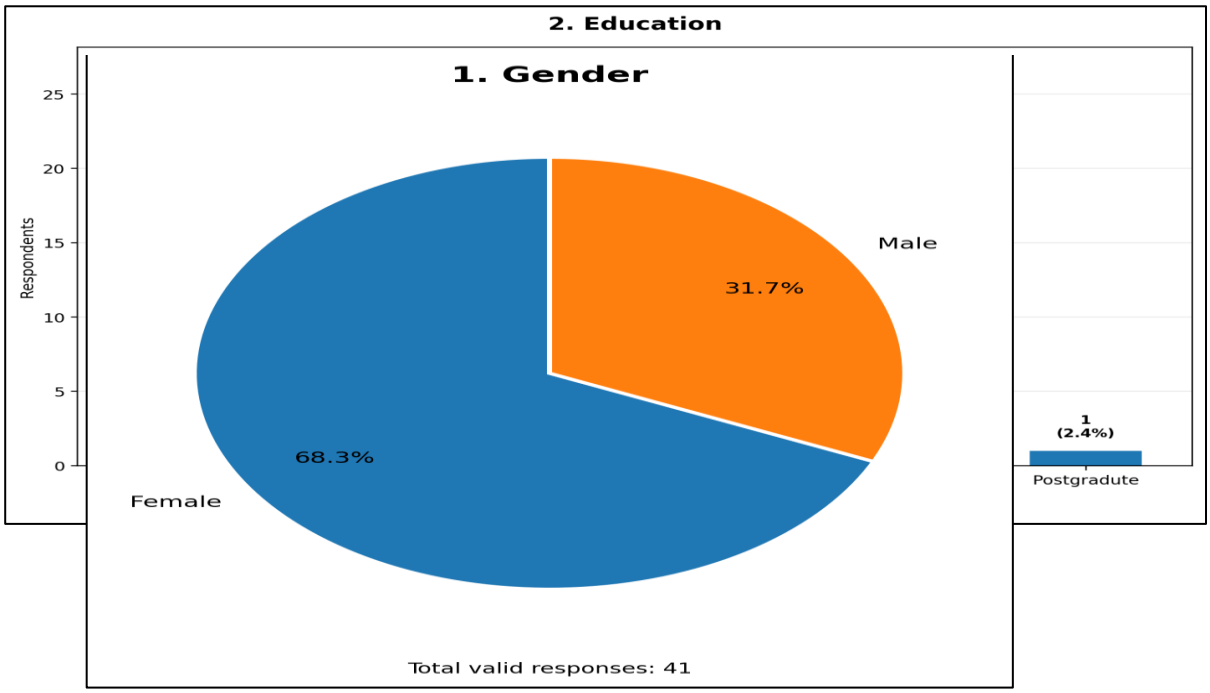

Figure 2 — Education

Explanation: The figure present my survey respondents' educational background. Primary is the most common education level, accounting for 53.7% of valid responses. The remaining respondents are distributed across the other education categories, indicating variation in educational attainment. Overall, the distribution indicates the dominant response pattern among the respondents.

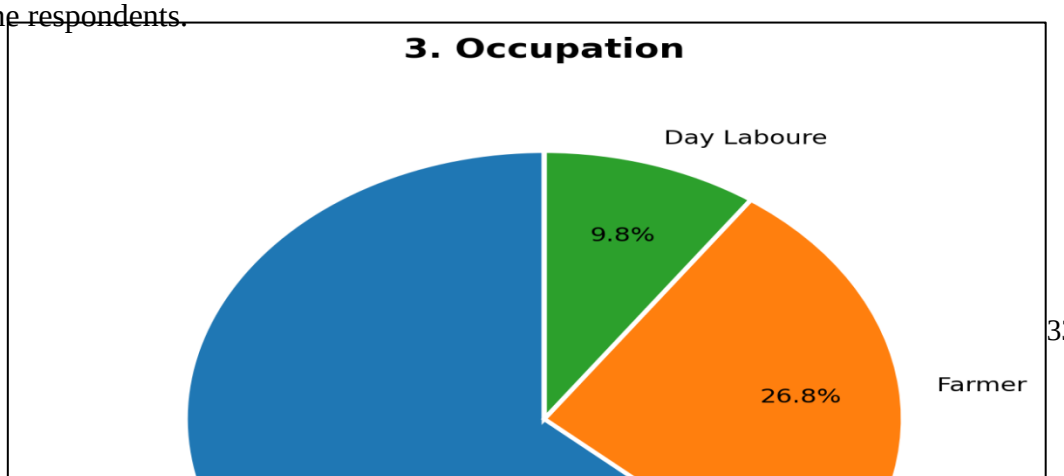

Figure 3 — Occupation

Explanation: The figure shows us main occupations of the respondents Homemaker. This is the largest occupational group at 63.4%.And other are Farmer and Day labor. Because ,most of the CCAG members are female and they are work in the household. This indicates that the survey mainly represents households engaged in the occupations shown in the figure, with smaller shares in the other categories. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views.

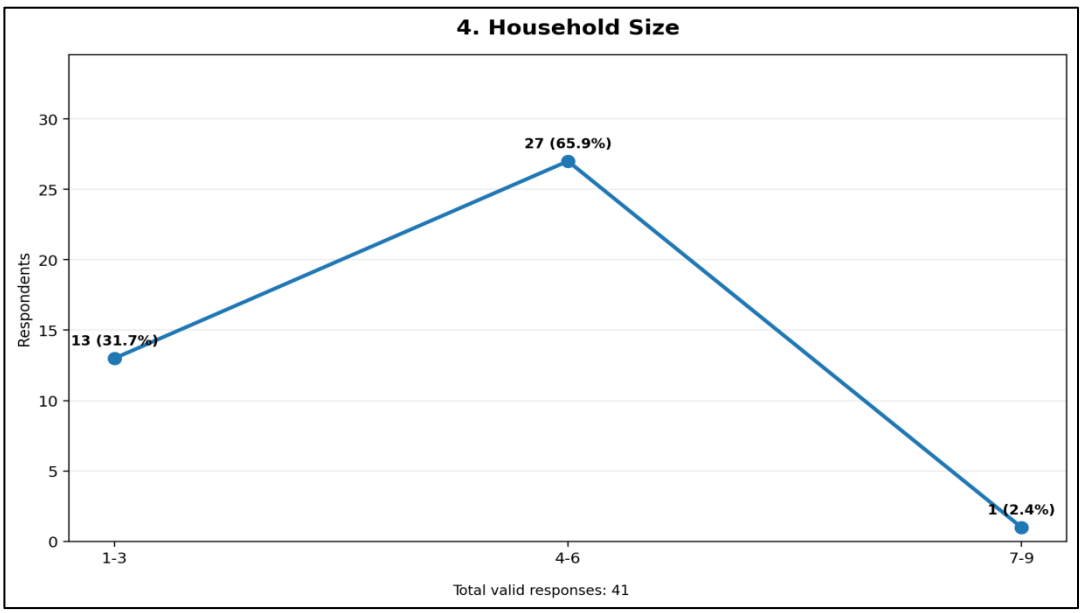

Figure 4 — Household Size

Explanation: The figure show the household-size categories. The most common category is 4-6 with 65.9% of respondents. Most of the family members are 4-6.The distribution indicates that household sizes vary across the surveyed community. Overall, the distribution indicates the dominant response pattern among the respondents. Others Category are less then 65.9%.Middle category is a 31.7% and last category is a2 2.4%.

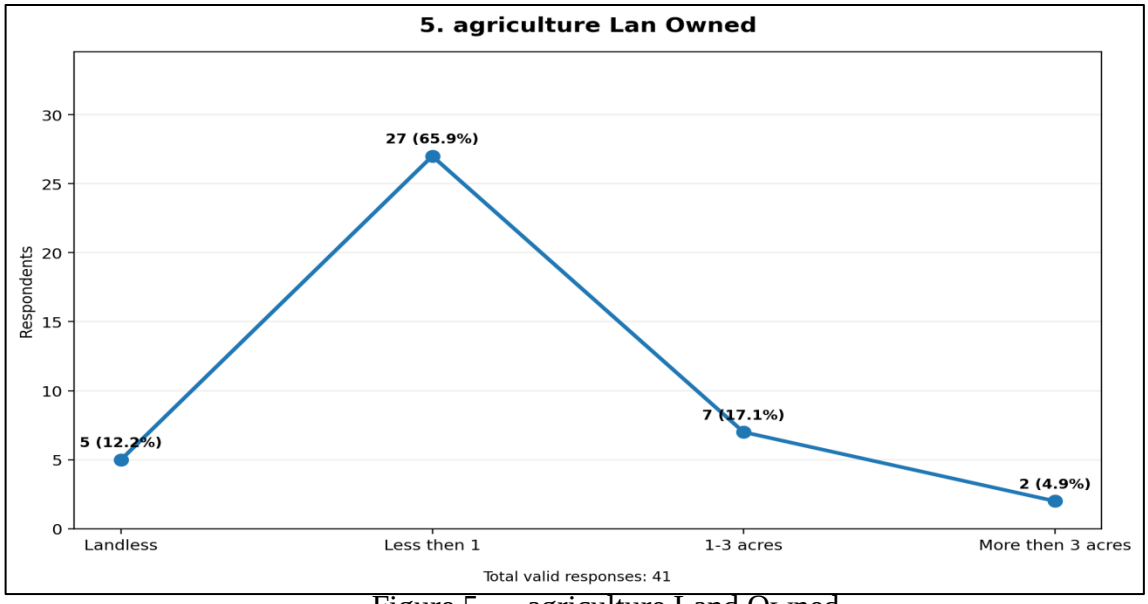

Figure 5 — agriculture Land Owned

Explanation: The figure present the most frequent response is Less then 1, selected by 27 respondents (65.9%). The other responses make up the remaining 34.1% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households. Most of the people demand on the other people

.

Figure 6- Experience of drought during last five years

Explanation: The figure present in the drought area people have experience drought. And all the people says they are faces the drought. Yes is the dominant response at 100.0%.This result shows the extent to which drought has affected the surveyed households. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views.

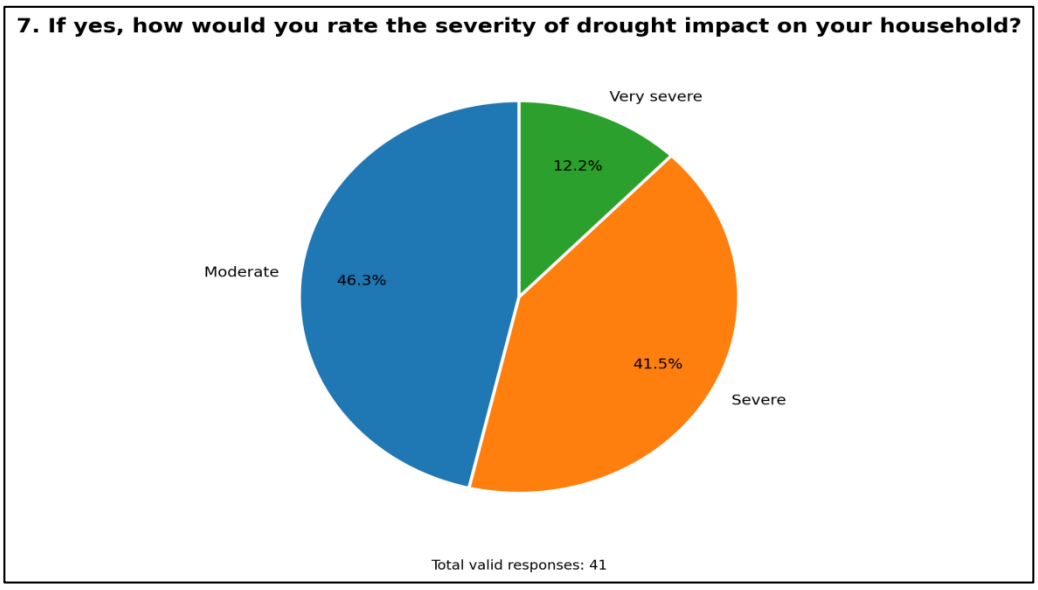

Figure 7-How would you rate the severity of drought impact on your households?

Explanation: The figure shows the respondents the most common assessment is Moderate at 46.3%, followed by Severe at 41.5%. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views.

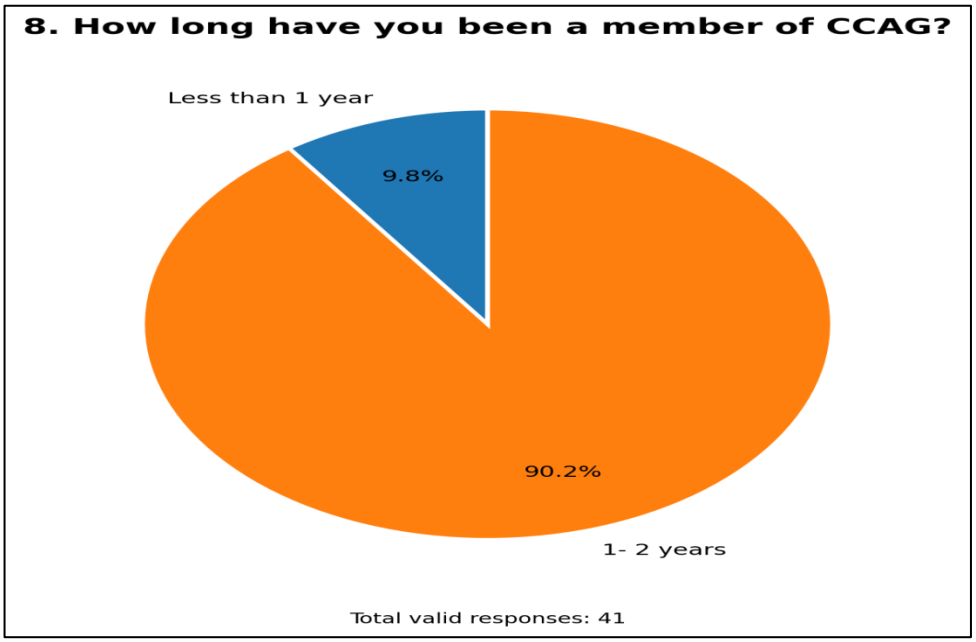

Figure 8 — How long have you been a member of CCAG?

Explanation: The figure represent the most frequent response is 1- 2 years, selected by 37 respondents (90.2%). Also they said, almost 2 years are knows about CCAG group. The other responses make up the remaining 9.8% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. Also I can see some members are join in new in the CCAG group.

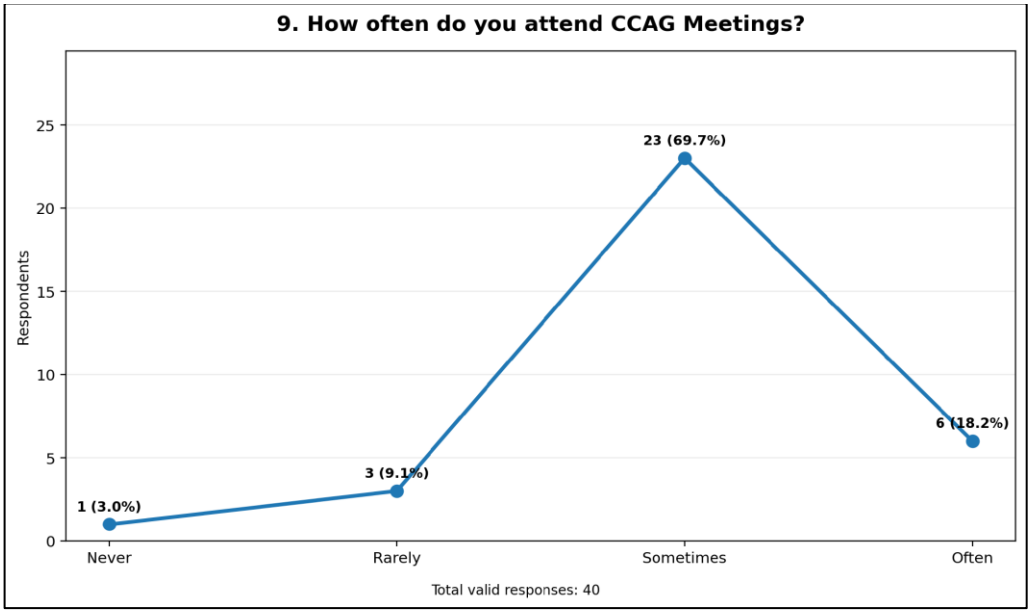

Figure 9 — How often do you attend CCAG Meetings?

Explanation: The figure shows the respondents' views on this statement. The largest response is Sometimes at 57.5%. Across the response categories, 32.5% fall into the more positive categories identified in the survey, while 2.5% fall into the negative categories. This suggests that respondents' overall perception is generally positive. Overall, the distribution indicates the dominant response pattern among the respondents. Some respondent they after joining the CCAG group but they cannot any meeting for they are personal issue .

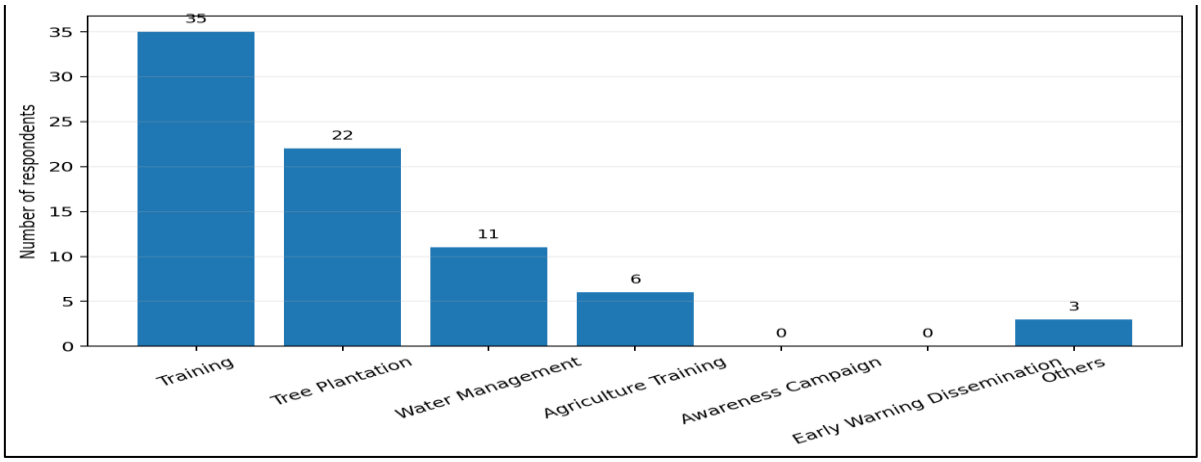

Figure 10: Participation in CCAG activities

Explanation: Training is the most frequently reported CCAG activity, followed by tree plantation and water management. Participation in agriculture training is lower, while awareness campaigns and early-warning dissemination were not recorded in the coded responses, indicating areas where participation may be strengthened. Most of the members says are they get training .

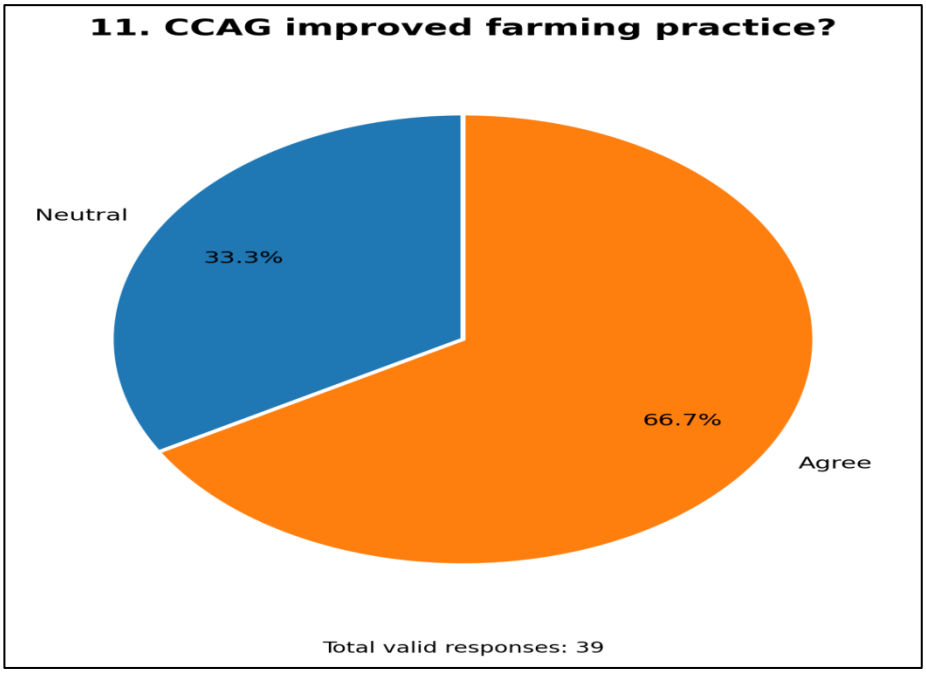

Figure 11 — CCAG has improve your farming practice?

Explanation: The figure represent the most frequent response is Agree, selected by 18 respondents (46.2%). The other responses make up the remaining 53.8% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views. Also some respondent said, cultivate better then before and crop product has improve.

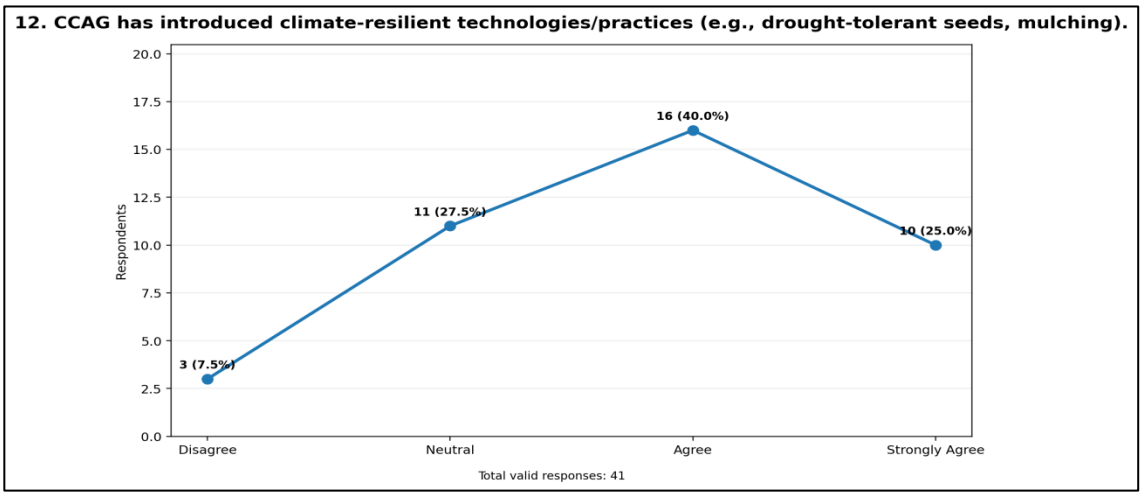

Figure 12 — CCAG has introduced climate-resilient technologies/practices

Explanation: The figure shows the majority response is Agree at 39.0%. Across the response categories, 63.4% fall into the more positive categories identified in the survey, while 7.3% fall into the negative categories. This suggests that respondents' overall perception is generally positive. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views.

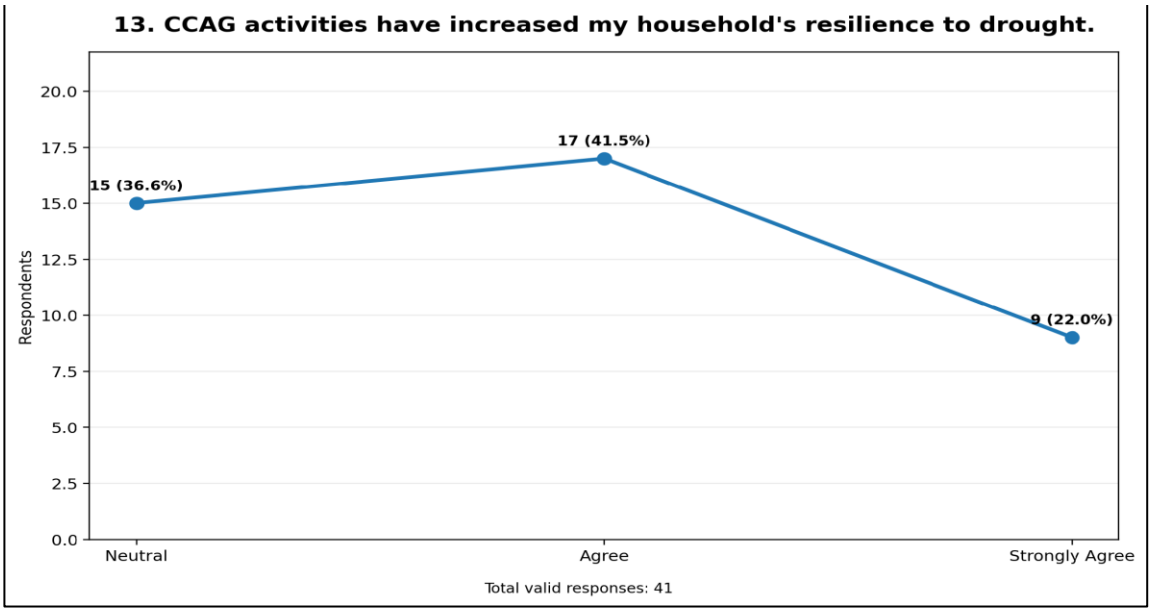

Figure 13 — CCAG activities have increased my household's resilience to drought.

Explanation: The figure represent he most frequent response is Agree, selected by 17 respondents (41.5%). The other responses make up the remaining 58.5% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The high percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views.

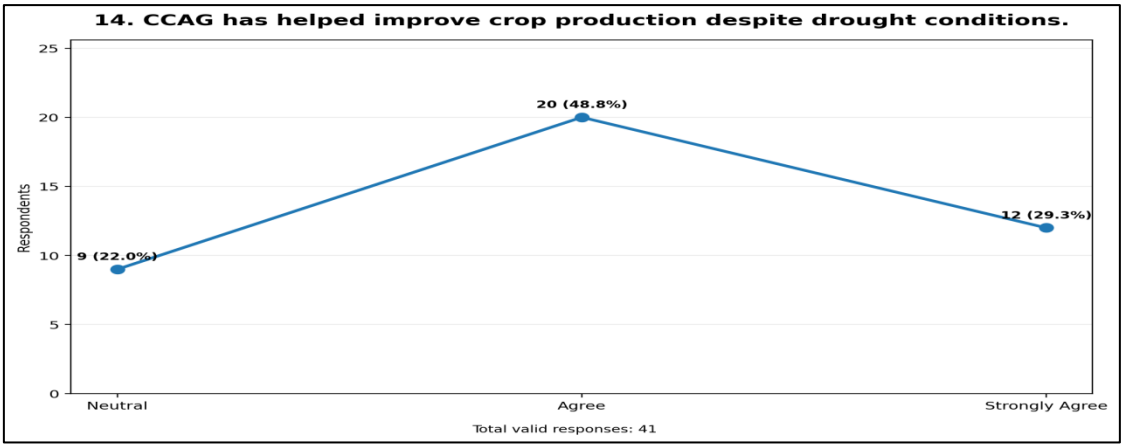

Figure 14 — CCAG has helped improve crop production despite drought conditions.

Explanation: The figure represent he most frequent response is Agree, selected by 20 respondents (48.8%). The other responses make up the remaining 51.2% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The high percentage represents the most common position of the surveyed households. Also they are know which process are improve they are production also they are train up for the trainer.

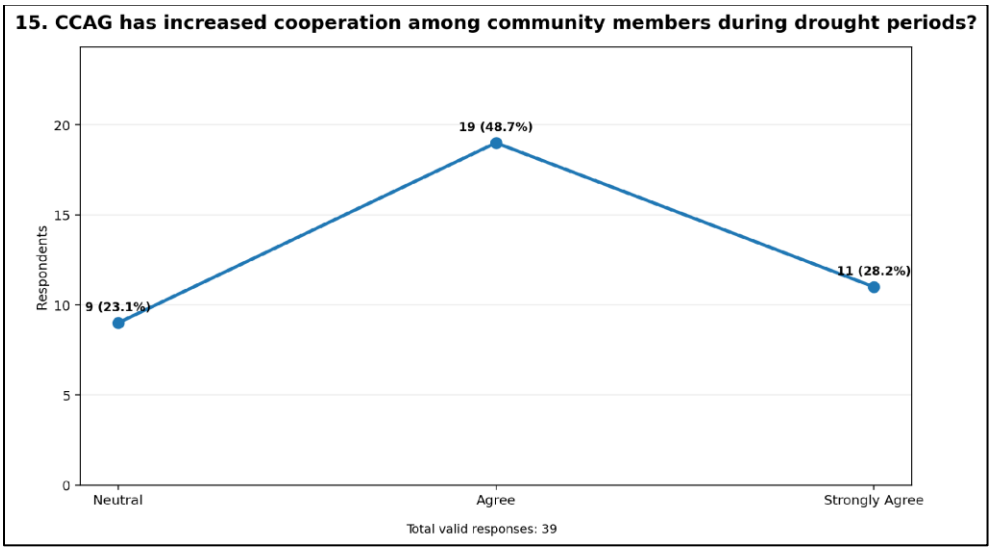

Figure 15 — CCAG has increased cooperation among community members during drought periods?

Explanation: The figure present the most frequent response is Agree, selected by 19 respondents (48.7%). The other responses make up the remaining 51.3% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views. Also some respondent are says they are share with close relative. Because, they are relative are not connect with CCAG group.

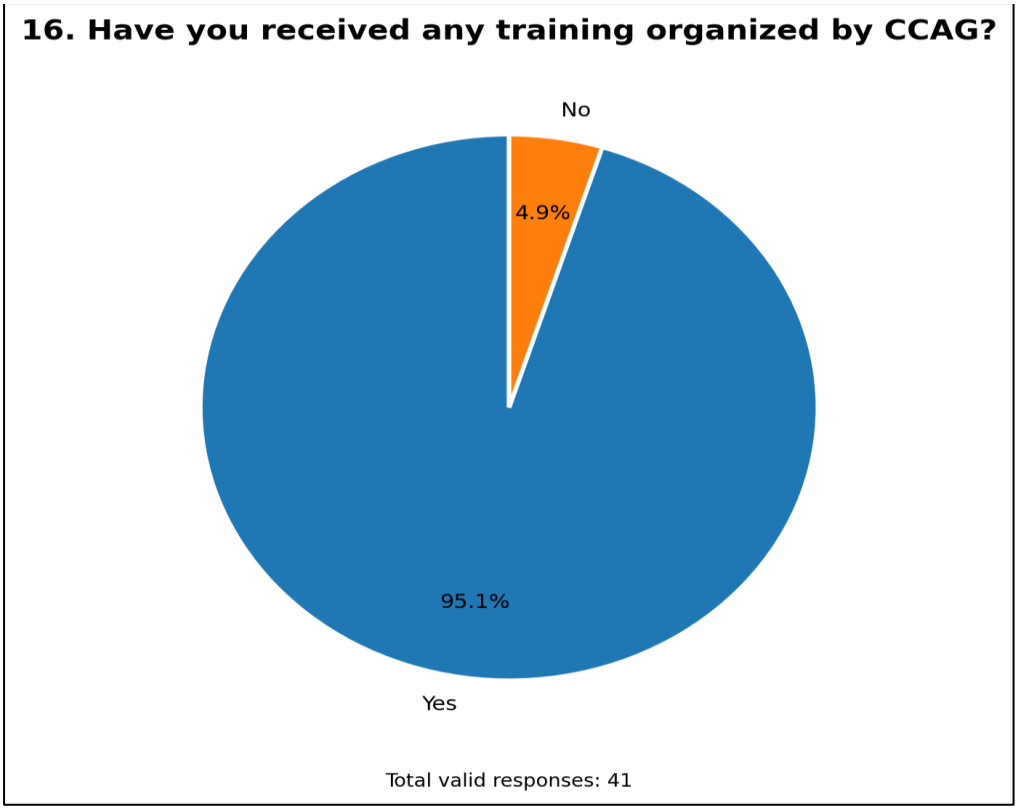

Figure 16 — Have you received any training organized by CCAG?

Explanation: The figure shows whether respondents received CCAG-organized training. Yes accounts for 95.1% of valid responses. This indicates the level of reach of CCAG training among the surveyed participants. Overall, the distribution indicates the dominant response pattern among the respondents. The large percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or view

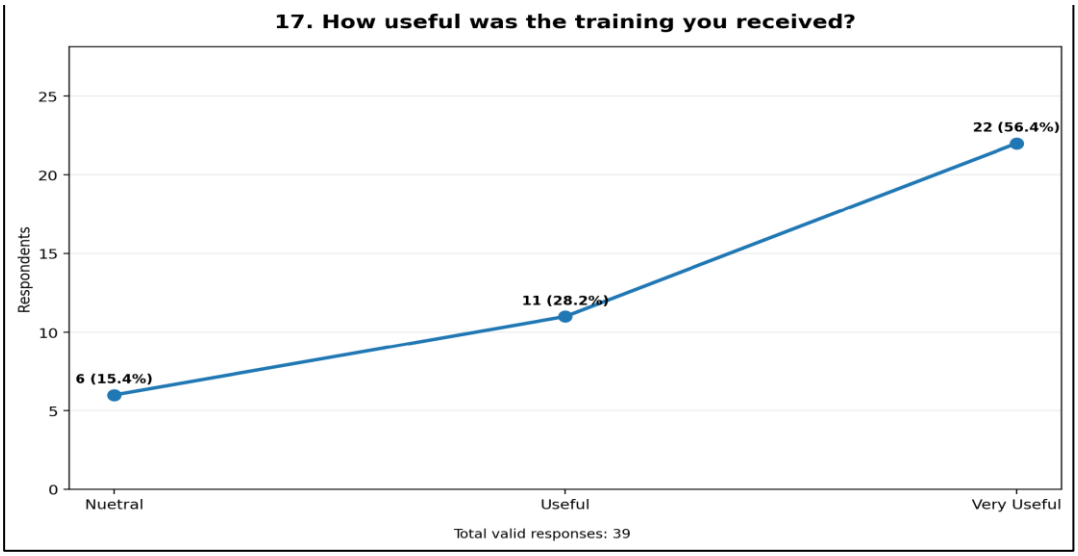

Figure 17 — How useful was the training you received?

Explanation: The figure represent survey respondent received CCAG-organized training. Very Useful accounts for 56.4% of valid responses. This indicates the level of reach of CCAG training among the surveyed participants. The point of view the distribution indicates the dominant response pattern among the respondents. The majority percentage represents the most common position of the surveyed households. The respondent says they wanted more training .Because, they are understand more training are useful for improve the production.

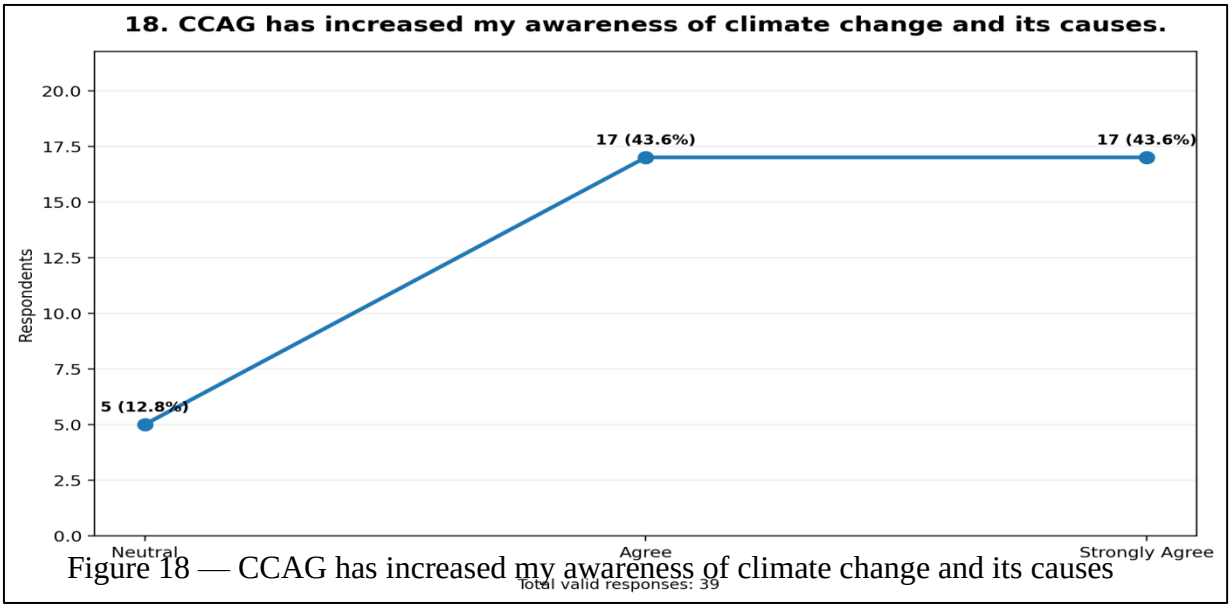

Figure 18 — CCAG has increased my awareness of climate change and its causes

Explanation: The figure shows the most frequent response is Agree, selected by 17 respondents (43.6%). The other responses make up the remaining 56.4% of valid responses, showing the variation of opinions within the sample. In general, the distribution indicates the dominant response pattern among the respondents. The large number of represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views. Yes, many respondent says awareness are helpful for their agriculture ,also livelihood.

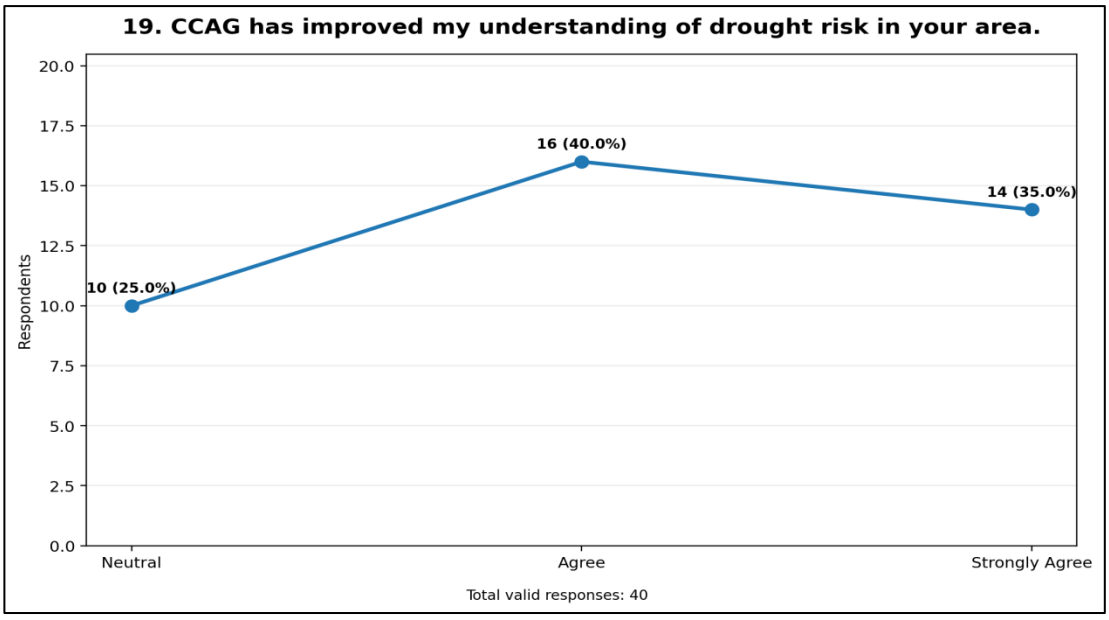

Figure 19 — CCAG has improved my understanding of drought risk in your area.

Explanation: The figure show the most frequent response is Agree, selected by 16 respondents (40.0%). The other responses make up the remaining 60.0% of valid responses, showing the variation of opinions within the sample. In summary ,the distribution indicates the dominant response pattern among the respondents. The large number of the represents the most common position of the surveyed households, while the smaller categories show the less common experiences. Also they says ,now people are know how can water waste be reduced.

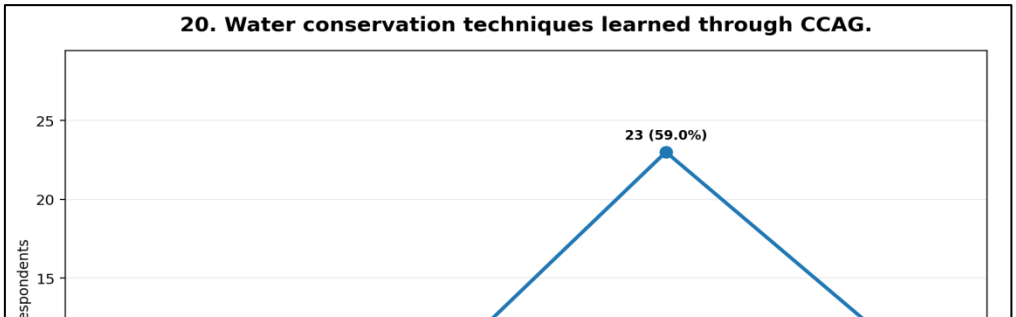

Figure 20 — You are learned water conservation techniques through CCAG.

Explanation: The figure show the largest response is Agree at 59.0%. Across the response categories, 79.5% fall into the more positive categories identified in the survey, while 5.1% fall into the negative categories. This suggests that respondents' overall perception is generally positive. In general, the distribution indicates the dominant response pattern among the respondents. The majority represents the most common position of the surveyed households. while the smaller categories show the less common experience and observe. In the negative categories people are new joining in the group and they cannot get any train. But majority people says now know how to save water.

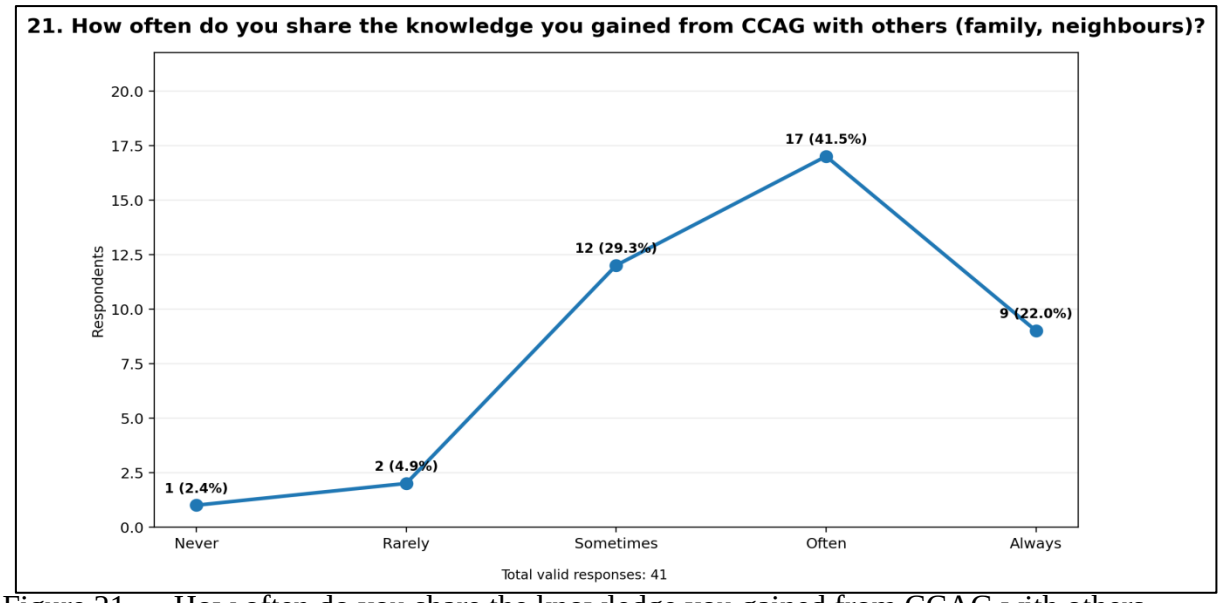

Figure 21 — How often do you share the knowledge you gained from CCAG with others

Explanation: The figure represent the largest response is Often at 41.5%. Across the response categories, 63.4% fall into the more positive categories identified in the survey, while 2.4%

fall into the negative categories. This suggests that respondents' overall perception is generally positive. In summary, the distribution indicates the dominant response pattern among the respondents. The high percentage represents the most common position of the surveyed households, while the smaller categories show the less common observation .Also many respondent are share the CCAG knowledge with others.

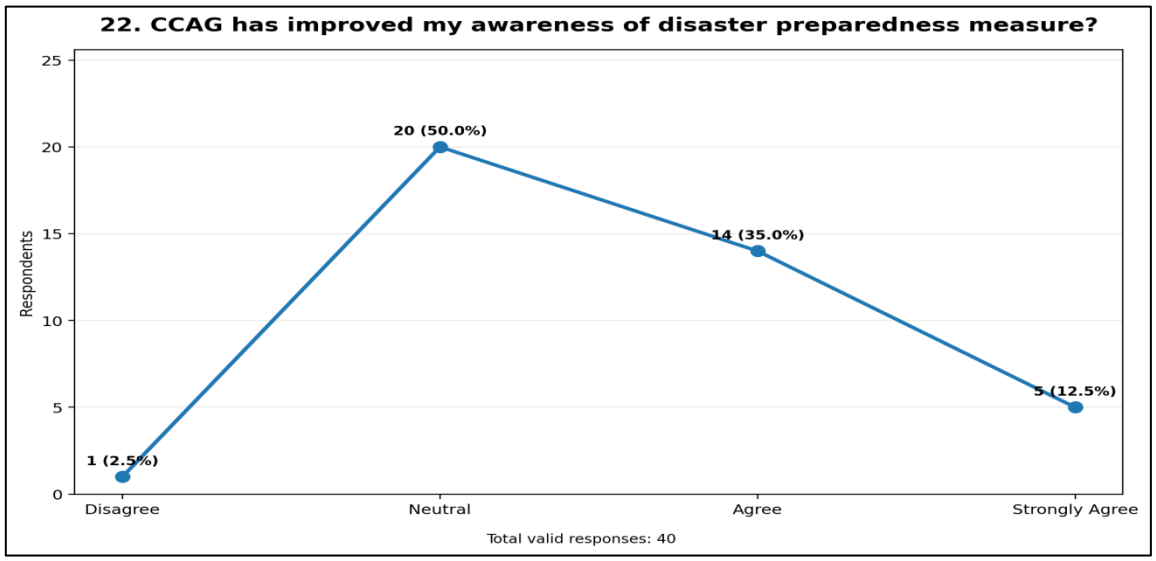

Figure 22 — CCAG has improved my awareness of disaster preparedness measure?

Explanation: The figure shows the largest response is Neutral at 50.0%. Across the response categories, 47.5% fall into the more positive categories identified in the survey, while 2.5% fall into the negative categories. This suggests that respondents' overall perception is generally positive. Overall, the distribution indicates the dominant response pattern among the respondents. The largest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences. This pattern is useful for assessing the present condition of the community and for understanding where the CCAG intervention appears to have the strongest relevance.

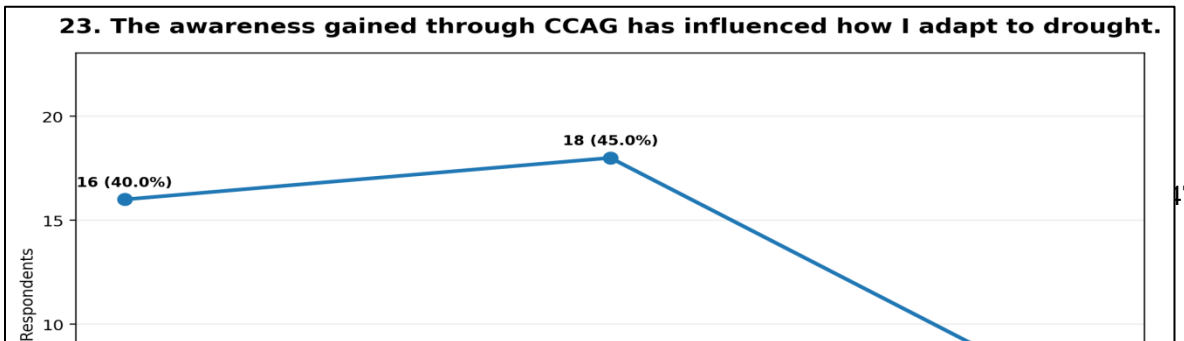

Figure 23 — The awareness gained through CCAG has influenced how I adapt to drought.

Explanation: The figure summarizes the responses to this survey question. The most frequent response is Agree, selected by 18 respondents (45.0%). The other responses make up the remaining 55.0% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or view.

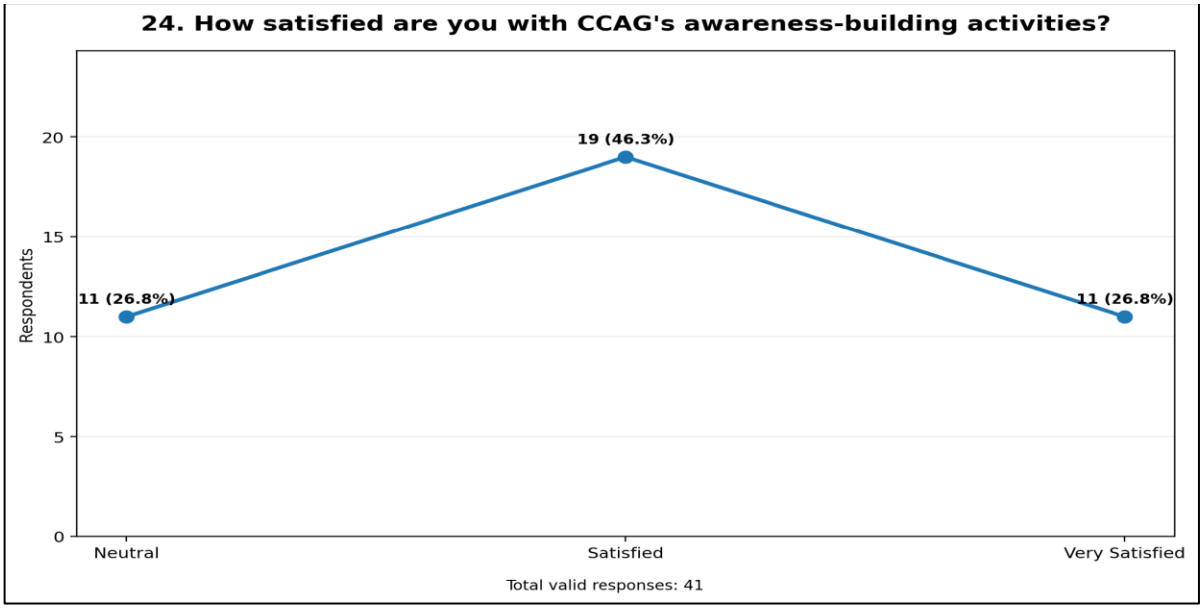

Figure 24 — How satisfied are you with CCAG's awareness-building activities?

Explanation: The figure represent the most frequent response is Satisfied, selected by 19 respondents (46.3%). The other responses make up the remaining 53.7% of valid responses, showing the variation of opinions within the sample. In general, the distribution indicates the

dominant response pattern among the respondents. The majority number of percentage represents the most common position of the surveyed households, the smaller categories show the less common perspective. But some respondent says CCAG group are need to the improve and also need to the more training.

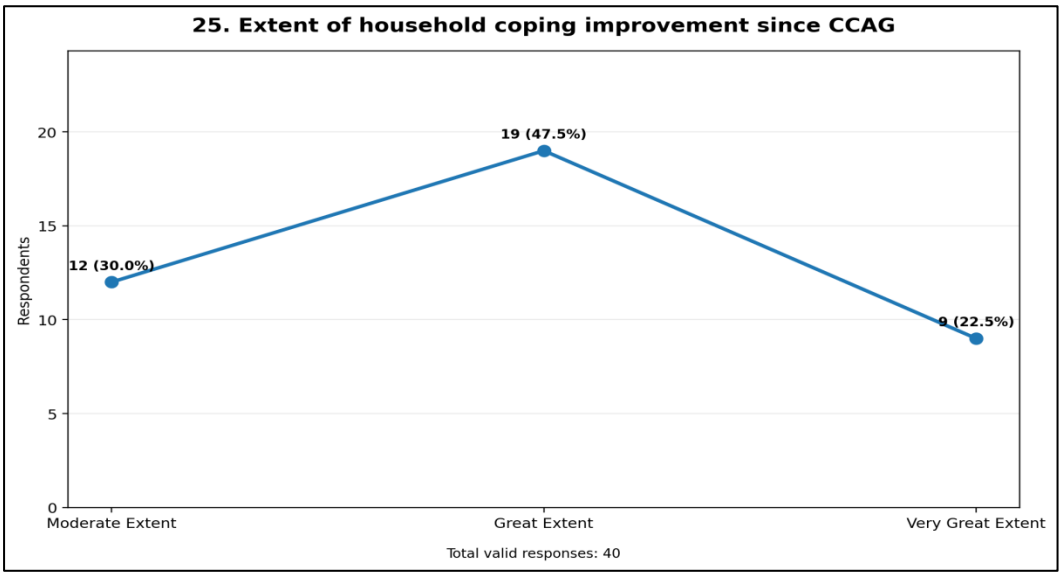

Figure 25 — what extent has your household's ability to cope with drought improved since joining/engaging with CCAG

Explanation: This figure shows us the most frequent response is Great Extent, selected by 19 respondents (47.5%). The other responses make up the remaining 52.5% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views..

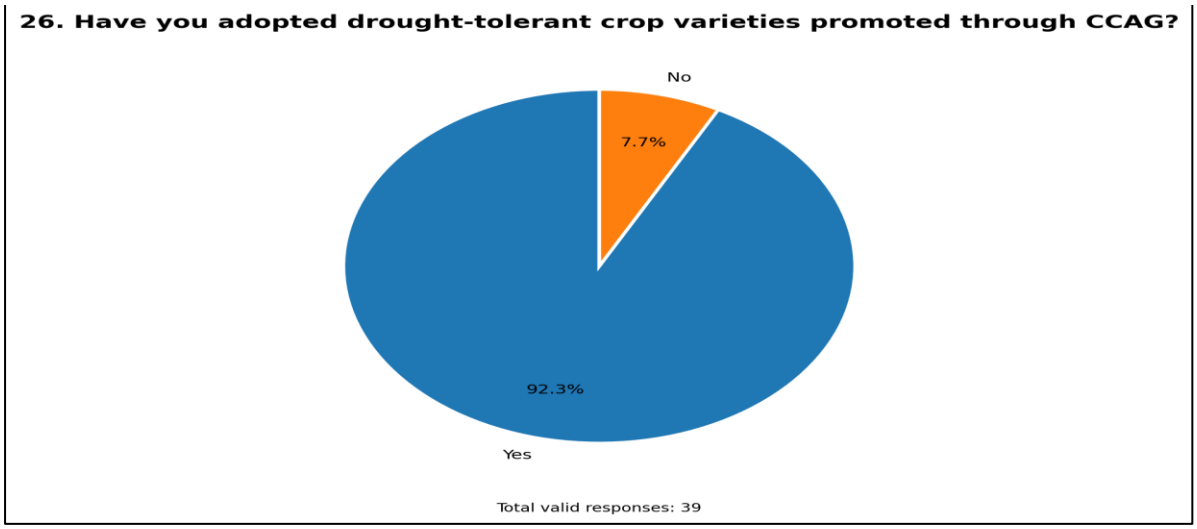

Figure 26 — Have you adopted drought-tolerant crop varieties promoted through CCAG?

Explanation: The figure represent the largest response is Yes at 92.3%. Across the response categories, 92.3% fall into the more positive categories identified in the survey, while 7.7% fall into the negative categories. In general I think most of the respondent perception is generally positive. Overall, the distribution indicates the dominant response pattern among the respondents. The largest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views. This pattern is useful for assessing the present condition of the community and for understanding where the CCAG intervention appears to have the strongest relevance

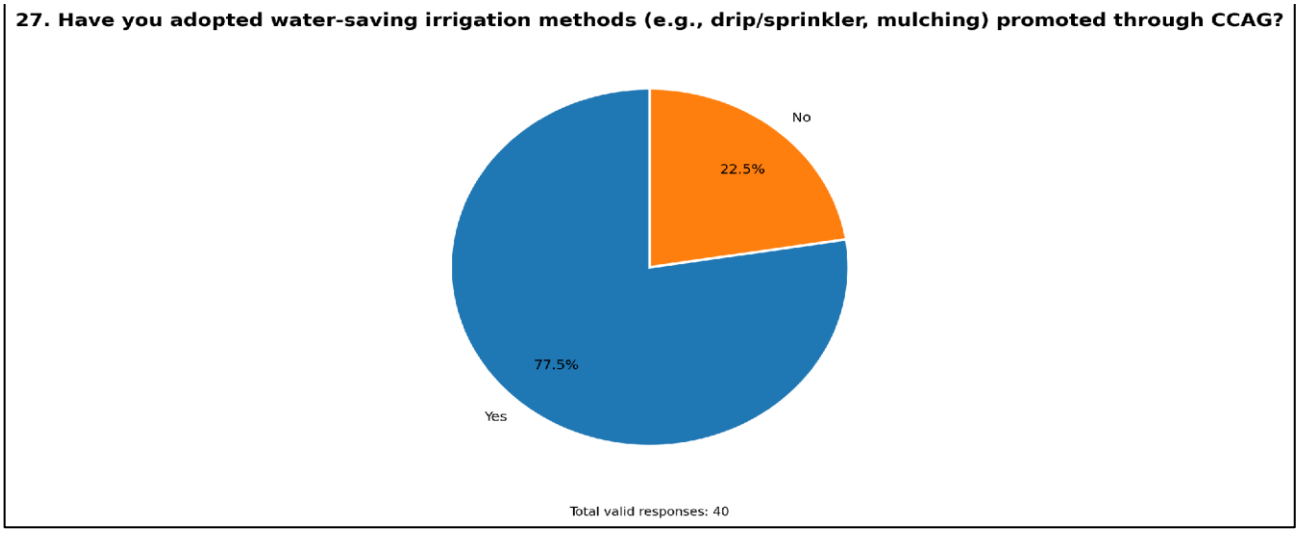

Figure 27 — Have you adopted water-saving irrigation methods (e.g., drip/sprinkler, mulching) promoted through CCAG?

Explanation: The figure summarizes respondents' views on this statement. The largest response is Yes at 77.5%. Across the response categories, 77.5% fall into the more positive categories identified in the survey, while 22.5% fall into the negative categories. This suggests that respondents' overall perception is generally positive. In summary, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, also small category are face the same experience.

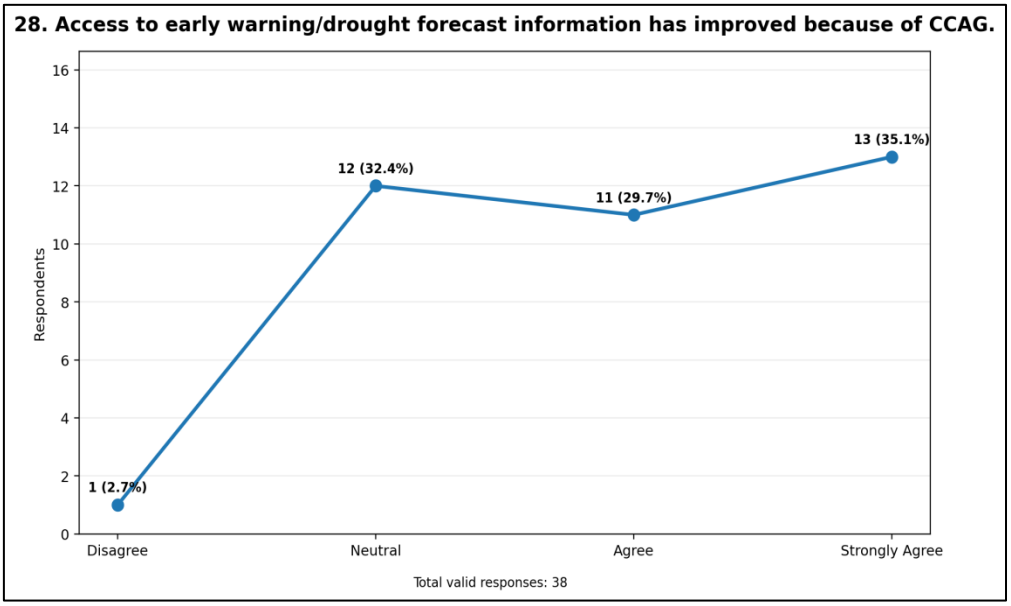

Figure 28 — Access to early warning/drought forecast information has improved because CCAG.

Explanation: The figure represent the largest response is Strongly Agree at 34.2%. Across the response categories, 63.2% fall into the more positive categories identified in the survey, while 2.6% fall into the negative categories. This suggests that respondents perception is generally positive. Overall, the distribution indicates the dominant response pattern among the respondents. In the most of respondent are says positive. CCAG are improve access to drought-related early warming information for many respondent the effect id not uniform.

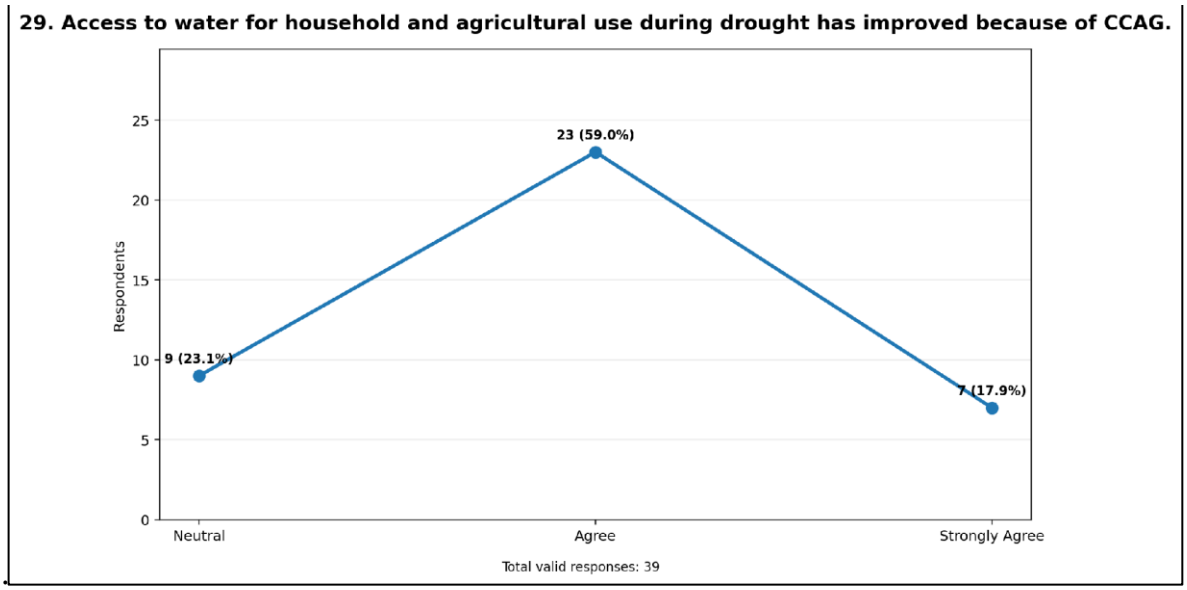

Figure 29 — Access to water for household and agricultural use during drought has improved because of CCAG.

Explanation: The figure summarizes the responses the most frequent response is Agree, selected by 23 respondents (59.0%). The other responses make up the remaining 41.0% of valid responses, showing the variation of opinions within the sample. Overall, the distribution indicates the dominant response pattern among the respondents. The majority percentage represents the most common position of the surveyed households, while the smaller categories show the less common observation.. This pattern is useful for assessing the present condition of the community and for understanding where the CCAG intervention appears to have the strongest relevance.

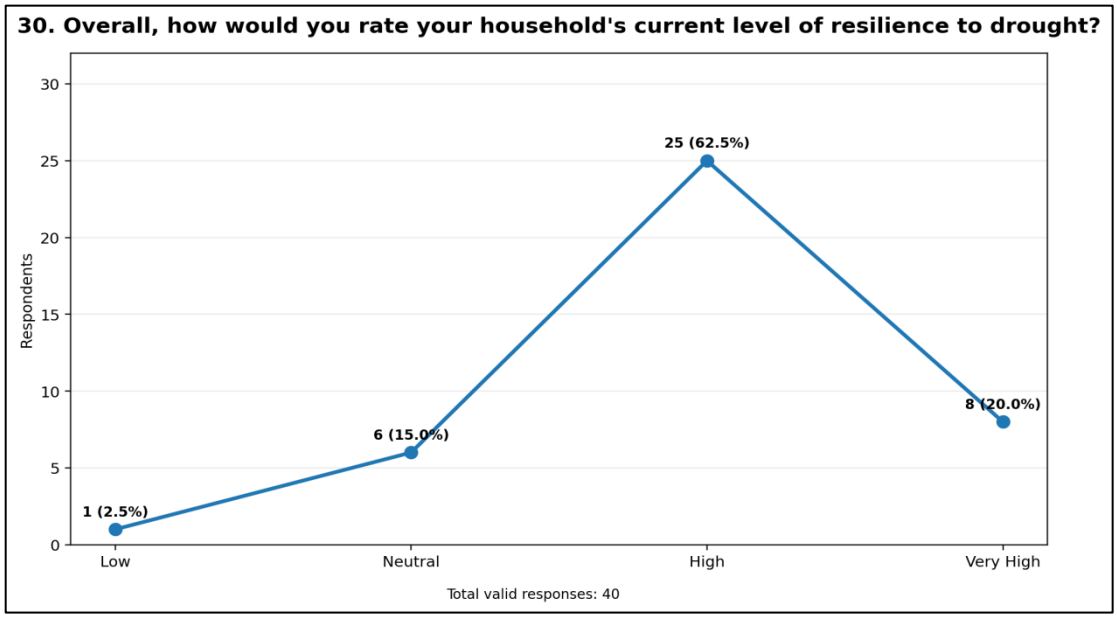

Figure 30 — Overall, how would you rate your household's current level of resilience to drought?

Explanation: The figure presents respondent current household resilience to drought. The largest category is high at 62.5%. The results provide an overall picture of how respondents perceive their present capacity to cope with drought .In summary, the distribution indicates the dominant response pattern among the respondents. The highest percentage represents the most common position of the surveyed households, while the smaller categories show the less common experiences or views. This pattern is useful for assessing the present condition of the community and for understanding where the CCAG intervention appears to have the strongest relevance. The findings should therefore be considered in relation to the respondents' demographic and household characteristics when drawing conclusions for the ECCCP project.

4.2 FGD Findings

FGD 1

Study Area: Lokkhitara Village, Aranagar Union, Dhamurhat Upazila, Naogaon District

Date: 29 July 2026

A Focus Group Discussion (FGD) was conducted with community members of Lokkhitara Village to understand the challenges caused by drought and the role of CCAGs in strengthening their resilience. In this FGD total 8-10 CCAG members are participant.

The participants reported that water scarcity is one of the major problems during the dry season, particularly in the month of summer. Due to insufficient water availability, they have to depend on motor pumps for irrigation, which increases agricultural costs and negatively affects their livelihoods. However, participants stated that the irrigation support provided through the project has been very helpful in addressing these challenges.

The all over CCAG members highlighted several benefits of being members of the Climate Change Adaptation Group (CCAG). They receive training on vegetable cultivation and learn different techniques for producing vegetables. The vegetables they grow are used for household consumption, while the surplus can be sold in the local market, providing them with an additional source of income. Regarding participation in the CCAG, participants reported that they have not faced any major problems within the group. They also emphasized that everyone has an opportunity to express their opinions during group discussions. According to them, there is no discrimination between male and female members, and the opinions of all participants are given importance. Many members get Mushroom and they experiment how to cultivate mushroom.

For making CCAG activities more sustainable and beneficial, participants suggested providing more agricultural training and technical support. Female participants particularly expressed interest in receiving training on home-based income-generating activities, as many women remain at home and would benefit from opportunities to earn income while managing household responsibilities.

Key findings

This indicate that CCAG activities are contributing positively to community resilience by improving agricultural knowledge, supporting vegetable production, creating additional income opportunities, and promoting inclusive participation of both men and women.

FGD 2

Study Area: Chakbhani Village, Aranagar Union, Dhamurhat Upazila, Naogaon District

Date 29 July 2026

A Focus Group Discussion (FGD) was conducted with community members of Aranagar Village to understand the challenges caused by drought and the role of CCAGs in strengthening their resilience. In this FGD total 10-12 CCAG members are participant.

FGD is members of the Climate Change Adaptation Group in the village explained that drought and high temperatures in the summer season badly affect their agriculture and livelihoods, drying up fields and sometimes affecting their health. Through CCAG meetings and training, members learned water conservation techniques and ways to reduce water wastage. They also received training on vegetable cultivation and vermicompost production, which has helped improve their farming practices. Participants said they hadn't faced any major difficulties after joining CCAG and emphasized that both male and female members have equal opportunities to share their opinions. For the future, they suggested more training and support for livestock rearing, such as cattle, goats, ducks ,and poultry, as well as training on mushroom cultivation to create additional income opportunities**.** Also they says they need to the more training .Many new members cannot get any training.

Key Findings

- CCAG activities have improved community knowledge of water conservation and efficient water use.
- Participants have gained practical skills in vegetable cultivation and vermicompost production.
- CCAG has created opportunities for both food security and additional household income through vegetable production.

- Both men and women have equal opportunities to participate in discussions and express their opinions.
- Participants identified the need for further training in livestock rearing, poultry farming, and mushroom cultivation to strengthen livelihoods and improve resilience to drought.

FGD 3

Study Area: Shilpara Village, Bandarpur Union, Badalgachhi Upazila, Naogaon District

Date: 30 July 2026

A Focus Group Discussion (FGD) was conducted with community members of Shilpara Village to understand the challenges caused by drought and the role of CCAGs in strengthening their resilience. In this FGD total 12-14CCAG members are participant

The FGD participants reported that drought creates several difficulties for their daily lives and agricultural activities. During drought periods, the amount of water available from tube wells decreases, creating difficulties in accessing safe drinking water. As surrounding water sources dry up, they also face challenges in cultivating crops. Participants mentioned that drought increases their dependence on purchasing straw for livestock, which creates additional financial pressure on their households.

Through the Climate Change Adaptation Group (CCAG), participants have received useful training and support on different agricultural and livelihood activities. They learned about pond excavation and management, livestock rearing, and the cultivation of various crops, including mustard, wheat, and rice. They also learned about vermicompost-based vegetable cultivation, which has helped them increase production and earn additional income, thereby reducing some of their financial difficulties. Participants stated that they have not faced any major problems after becoming CCAG members.

The participants also reported that everyone gets an opportunity to participate in discussions and express their opinions within the group. Both male and female members emphasized the

need for further support, particularly providing seeds and other necessary inputs for papaya and other crop cultivation, which would allow women to engage in income-generating activities from home.

Key Findings

- Drought causes water scarcity and difficulties in crop cultivation.
- CCAG training has improved agricultural and livelihood practices.
- Vermicompost-based vegetable cultivation provides additional income.
- Both men and women have opportunities to express their opinions.
- Participants want seeds and inputs for papaya and other crops to support home-based income generation.

FGD 4

Study Area: Tentulia Village, Kula Union, Badalgachhi Upazila, Naogaon District

Date 30 July 2026

This is Focus Group Discussion (FGD) was conducted with community members of Tentulia Village to understand the challenges caused by drought and the role of CCAGs in strengthening their resilience. In this FGD total 5-6 CCAG members are participant.

The FGD participants reported that drought creates significant challenges for their community, particularly in agriculture and access to drinking water. During drought periods, water becomes extremely scarce, causing considerable losses in crop production. As Naogaon is an important agricultural area, especially for rice cultivation, water scarcity during the dry season has a serious impact on farmers' livelihoods. Participants also mentioned that drinking water becomes difficult to access during severe drought.

The participants stated that CCAG meetings and activities have been highly beneficial in increasing their awareness about water conservation and reducing water wastage. Previously, they had limited knowledge about how to conserve and manage water, but through the meetings they learned that water resources are limited and should be used carefully. They also learned about the MAR (Managed Aquifer Recharge) method for collecting and conserving

water and observed its application in some areas. In addition, the meetings and training helped them improve their agricultural practices. They mentioned that they are now able to cultivate different crops and showed examples of crops such as papaya and other vegetables grown around their households.

Participants reported that they have not faced any major problems within the CCAG and that both male and female members have equal opportunities to participate in discussions and express their opinions. For making CCAG activities more sustainable, participants recommended creating home-based income-generating opportunities for women, including duck, poultry and goat rearing, as well as providing seeds for different vegetables. They also suggested providing women with more training on water management and agricultural activities. Both male and female participants expressed interest in receiving further training, particularly on rice cultivation and improved farming practices.

Key Findings

CCAG activities are improving community resilience to drought by increasing awareness of water conservation, introducing improved water-management practices, strengthening agricultural activities, and creating opportunities for both men and women to improve their livelihoods.

Overall Findings of FGD: Challenge

The overall findings from the FGDs indicate that drought is a major challenge for rural communities, particularly affecting water availability, agricultural production, and household livelihoods. Participants from different villages reported that during the dry season, especially in the month of summer season , water sources such as tube wells and ponds become dry or provide insufficient water, creating difficulties in accessing safe drinking water and irrigation. As a result, farmers often have to depend on motor pumps for irrigation, which increases production costs and places additional financial pressure on households.

Drought also causes crop losses and difficulties in cultivating rice, vegetables, and other agricultural products. The scarcity of water negatively affects livestock and household activities as well. Participants highlighted that limited knowledge and resources for water conservation remain important challenges. Women, in particular, have fewer opportunities to engage in income-generating activities outside the home.

However, the FGDs also showed that CCAG activities are helping communities address these challenges through training on water conservation, improved agricultural practices, vegetable cultivation, vermicompost production, and other livelihood activities. Participants recommended more agricultural training, seeds and farming inputs, livestock and poultry support, mushroom cultivation, and home-based income-generating opportunities for women to strengthen their resilience to drought.

4.3 KII Findings

Name Of the key Informant	**Designation**	**Organization**
Ahmadullah Zaman	Project Coordinator ECCCP-drought	JRDM
Md .Abdullah Al Mamun	Technical Officer	JRDM
Manjurul Islam	Agricultural officer	JAKAS Foundation
Forhad Hossain	Accountant cum MIS officer	JAKAS Foundation

Ahmadullah Zaman explained that CCAG's main objective is to make local communities aware of and capable of addressing the impacts of climate change and drought. Through

CCAG, community members receive awareness and training on water conservation, rainwater harvesting, drought management, and climate-resilient agricultural practices. CCAG also raises awareness among rural communities through regular meetings and training sessions on conserving and properly using water during drought periods. Members are encouraged to practice water-saving agriculture, reduce water wastage, and adopt alternative farming practices. Through these activities, local people have become more aware of climate change and its impacts and have gained practical knowledge about water conservation, drought management, and climate-resilient agriculture. However, limited funding, inadequate access to appropriate technologies, insufficient training opportunities, and a lack of awareness among some community members remain major challenges. He believes that taking local people's opinions through meetings and discussions and involving them in planning and decision-making can make the activities more effective.

Abdullah stated that the main goal of CCAG in his area is to organize local communities to address climate-related risks, particularly drought and water scarcity. Along with raising awareness, CCAG provides training on water conservation, rainwater harvesting, drought management, and climate-resilient agricultural practices. Through these activities, people learn how to use and conserve limited water resources during drought periods. Training on water-efficient farming, reducing water wastage, and adopting alternative agricultural activities also helps improve the drought resilience of rural communities. He identified increased awareness about climate change as one of the major achievements of CCAG. However, financial constraints, limited access to modern technologies, insufficient training opportunities, water scarcity, and limited regular participation and awareness among community members remain challenges. He also mentioned that CCAG involves local people in planning by collecting their opinions and organizing meetings and discussions to identify local problems and needs.

According to Forhad Hossain, the main objective of CSCG is to support community groups by informing them about different project-related issues, increasing awareness, and providing opportunities and training to help achieve the project goals. The activities include creating opportunities for CSCG members and providing training on drought management, integrated crop cultivation, vegetable farming, and organic fertilizer production. He further explained

that CSCG helps increase awareness, prevent environmental pollution, conserve rainwater, and reduce water wastage. Members are also taught how to cultivate crops using less water and without or with minimal chemical pesticides. However, he mentioned that timely participation and responses from members are not always available due to a lack of awareness. In his opinion, implementing these activities over the long term could significantly increase awareness among community members and create more sustainable outcomes.

Manjurul Islam stated that CCAG contributes to farmers' skill development, water conservation, and communication development. He highlighted several important practices, including tree plantation, water conservation, the use of appropriate technologies, and the application of organic fertilizer in agriculture. He did not provide any specific comment regarding the third question. Regarding future improvements, he emphasized that the activities would be more effective if implemented over the long term. He suggested introducing IGA-based training systems, providing grants, and supporting women by providing sewing machines so that they can develop income-generating activities and become more self-reliant. He also felt that, to make the initiative more effective, awareness needs to be increased and all community members should be encouraged and actively engaged in the activities.

Chapter: Five

5.Recommendations

Based on the study findings, the following recommendations are suggested:

Strengthen CCAG Training and Capacity Building

Regular training should be arranged on drought adaptation, climate-smart agriculture, water management, and other practical adaptation techniques to improve the capacity of CCAG members.

Increase Climate Change and Drought Awareness

Awareness activities should be strengthened to help community members better understand drought risks, water conservation, climate change impacts, and appropriate adaptation measures.

Promote Drought-Resilient Agricultural Practices

Farmers should be encouraged and supported to adopt drought-resistant crops, improved farming techniques, efficient irrigation methods, and other climate-resilient agricultural practices.

Develop Alternative Livelihood Opportunities

Alternative income-generating activities should be promoted to reduce rural households' dependence on agriculture and help them cope with income losses during drought periods.

Ensure Inclusive Community Participation

CCAG activities should ensure meaningful participation of women, vulnerable households, and other community members in discussions and decision-making processes.

Strengthen Institutional Coordination and Support

Better coordination should be established among CCAGs, local institutions, NGOs, and agricultural extension services to improve access to technical knowledge, resources, and adaptation support.

Ensure Regular Monitoring and Sustainability

Regular monitoring and evaluation of CCAG activities should be conducted to identify challenges, improve effectiveness, and ensure the long-term sustainability of community-based adaptation initiatives.

Chapter: Six

6.Research Limitations

Limited Study Area and Sample

The study was conducted in selected drought-prone areas with a limited number of CCAG members. Therefore, the findings may not be directly generalizable to all drought-prone areas of Bangladesh. Moreover, the use of purposive sampling may have limited equal representation of all CCAG members.

Time and Data Limitations

Due to the limited research period, it was not possible to assess the long-term impact of CCAG activities. Changes in agricultural production, water security, and livelihoods could be better understood through long-term observation.

Reliance on Respondents' Perceptions

A significant part of the study is based on respondents' experiences, opinions, and perceptions. Therefore, some information may vary due to differences in individual experiences or memory. However, the use of quantitative surveys, FGDs, and KIIs helped provide a broader understanding of the findings.

Chapter: Seven

7.Conclusion

This study examined the role of Climate Change Adaptation Groups (CCAGs) in building rural resilience to drought under the PKSF ECCCP-Drought Project. The findings indicate that drought is not only an agricultural challenge but also affects household water access, food security, livelihoods, and the overall well-being of rural communities. In this context, strengthening the capacity of local communities has become increasingly important for managing drought-related risks.

The study demonstrates that CCAGs have contributed to strengthening community-level adaptive capacity through awareness creation, training, knowledge sharing, collective participation, and the promotion of climate-resilient practices. A large proportion of respondents reported positive changes in their understanding of drought risks, water conservation, agricultural adaptation, and household resilience after becoming involved with CCAG activities. The adoption of drought-tolerant crops and water-saving irrigation practices further suggests that knowledge and awareness gained through the groups can influence practical responses to drought conditions.

The qualitative findings from FGDs and KIIs also reinforce the importance of community-based adaptation. Participants highlighted improvements in water management, agricultural practices, vegetable cultivation, vermicomposting, livestock-related activities, and other livelihood opportunities. The discussions further showed that collective participation creates opportunities for rural people to share knowledge, identify local problems, and develop

responses according to their own needs. The involvement of both men and women in group activities also reflects the potential of CCAGs to promote more inclusive community participation.

However, the study also suggests that community resilience cannot be strengthened through awareness and training alone. Continued access to agricultural inputs, water-management facilities, livelihood opportunities, technical support, and institutional assistance is necessary

to sustain adaptation efforts. Greater attention to women's home-based income-generating opportunities and the expansion of practical training can further enhance the benefits of CCAG interventions.

Overall, the study concludes that CCAGs represent a valuable community-based mechanism for strengthening rural resilience to drought. Their contribution extends beyond individual knowledge development by encouraging collective action, local participation, and practical adaptation. With continued institutional support, improved resources, and long-term capacity-building initiatives, CCAGs can play an even more significant role in helping drought-prone rural communities develop sustainable and locally appropriate strategies for coping with the growing challenges of climate change.

Chapter: Eight

8. Appendices

8.1 Consent Form

Tittle : The Role Of Climate Change Adaptation Group (CCAG) in building rural resilience to drought: A study under PKSF ECCCP-Drought Project

Researcher: Somaiyaj Shamim Shamanta

Institution: Palli Karma-Sahayak Foundation (PKSF)

Purpose of the Study:

Through this research, the availability and accessibility of drinking water and its health impacts in the Barind area will be analyzed.

Your Participation:

- Your participation is completely voluntary.
- The interview will take approximately 20 minutes.
- The information collected will be used only for research purposes.

Risks and Benefits:

- There are no expected physical or mental risks from participating in this study.
- Your participation may contribute to the research findings.

Confidentiality:

- All information provided by you will be kept strictly confidential.
- Your identity will not be disclosed.

Contact Information:

Researcher: Somaiyaj Shamim Shamanta

Email: somaiyajshamim5@gmail.com

☐ **I have understood the purpose of the research and agree to participate voluntarily.**

Participant's Name: _____

Signature: _____

Date: ____ / ____ / _____

8.2 Questionnaire

Assessing the role Of Community Climate Adaptation (CCAGs) in Enhancing Drought Resillinc

Enhancing Climate Change and Community Resilience through Climate-smart Practices (ECCCP)–Drought Project, PKSF

Objective

The objective of this questionnaire is to assess how the Community Climate Adaptation Groups (CCAGs) formed under the PKSF ECCCP-Drought Project have contributed to increasing the capacity of households and communities to cope with and adapt to drought.

Instructions

Please put a (✓) mark in the appropriate box or write your answer in the designated space. All information provided by you will be kept completely confidential and will be used only for research and project evaluation purposes.

Information	Details
Questionnaire No.	
Name of Interviewer	
Date of Interview	____ / ____ / 2026
District	
Upazila	
Union/Ward	
Village	
Name of CCAG (if applicable)	

Part A: General Information of the Respondent

1. Name of the Respondent: .....

2. Age

☐ 18–25 years ☐ 26–35 years ☐ 36–45 years ☐ 46–55 years ☐ Above 55 years

3. Gender

☐ Male ☐ Female ☐ Other

4. Marital Status

☐ Unmarried ☐ Married ☐ Divorced ☐ Widowed

5. Educational Qualification

☐ No formal education ☐ Primary ☐ Secondary ☐ Higher Secondary ☐ Graduate ☐ Postgraduate

6. Main Occupation

☐ Farmer
☐ Day laborer
☐ Business
☐ Service/Job
☐ Homemaker
☐ Other (Please specify): _____

7. Number of Family Members

☐ 1–3 persons
☐ 4–6 persons
☐ 7–9 persons
☐ 10 persons or more

8. Amount of Agricultural Land

☐ Landless
☐ Less than 1 acre
☐ 1–3 acres
☐ More than 3 acres

9. Has your family experienced drought during the last five years?

☐ Yes
☐ No

10. If yes, how severe was the impact of drought on your family?

☐ Very high
☐ High
☐ Moderate
☐ Low
☐ No impact

Part B: Activities and Contributions of CCAG

1. How long have you been a member of CCAG?

☐ Less than 1 year
☐ 1–2 years

☐ 3–5 years
☐ More than 5 years

2. How frequently do you participate in CCAG meetings?

☐ Always
☐ Often
☐ Sometimes
☐ Very rarely
☐ Never

3. Which CCAG activities have you participated in? (Multiple answers applicable)

☐ Training
☐ Tree plantation
☐ Water management
☐ Agricultural training
☐ Awareness-raising activities
☐ Dissemination of early warning messages
☐ Other (Please specify): _____

4. CCAG has helped improve my agricultural activities.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

5. CCAG has helped me adopt drought-resilient technologies and practices (e.g., drought-tolerant varieties, mulching, etc.).

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

6. CCAG activities have increased my family's capacity to cope with drought.

☐ Strongly agree
☐ Agree
☐ Neutral

☐ Disagree
☐ Strongly disagree

7. CCAG has helped improve crop production even during drought.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

8. CCAG has increased mutual cooperation within the community during drought.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

Part C: Awareness Raising through CCAG

1. Have you received any training through CCAG?

☐ Yes
☐ No

2. How useful was the training?

☐ Very useful
☐ Useful
☐ Neutral
☐ Less useful
☐ Not useful

3. CCAG has increased my awareness of climate change.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

4. CCAG has increased my understanding of drought risks in my area.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

5. Through CCAG, I have learned water conservation techniques.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

6. How often do you share the knowledge gained from CCAG with others?

☐ Always
☐ Often
☐ Sometimes
☐ Very rarely
☐ Never

7. CCAG has increased my awareness of disaster preparedness.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

8. The awareness gained from CCAG has helped me adapt to drought.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

9. What is your level of satisfaction with CCAG's awareness-raising activities?

☐ Very satisfied
☐ Satisfied

☐ Neutral
☐ Dissatisfied
☐ Very dissatisfied

Part D: Outcomes of Drought Resilience

1. To what extent has your family's capacity to cope with drought increased after becoming involved with CCAG?

☐ Very high
☐ Much higher
☐ Moderate
☐ Slightly
☐ Not at all

2. Have you adopted drought-tolerant crop varieties promoted through CCAG?

☐ Yes
☐ No

3. Have you adopted water-saving irrigation methods (e.g., drip, sprinkler, mulching)?

☐ Yes
☐ No

4. Due to CCAG, access to early warning information related to drought has increased.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

5. Due to CCAG, the availability of water for household and agricultural activities during drought has increased.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

6. How would you currently assess your family's capacity to cope with drought?

☐ Very high
☐ High
☐ Moderate
☐ Low
☐ Very low

7. In your opinion, which CCAG activity has

contributed the most to increasing your drought resilience?

☐ Training and awareness
☐ Water management infrastructure
☐ Drought-tolerant seeds and agricultural inputs
☐ Livelihood diversification
☐ Early warning system
☐ Other (Please specify): _____

Thank you very much for your valuable time and cooperation.

Focus Group Discussion (FGD) Guideline (Assessing the Role of Community Climate Adaptation Groups (CCAGs) in Enhancing Drought Resilience)

1. What are the major impacts of drought in your community?

2. How has the Community Climate Adaptation Group (CCAG) helped your community cope with and adapt to drought?

3. In your opinion, which activities of CCAG have been most effective in enhancing drought resilience? Why?

4. What types of challenges or barriers does CCAG face in implementing drought adaptation activities?

5. How would you assess the level of community participation in the planning and decision-making processes of CCAG?

6. What recommendations do you have for making the role of CCAG more effective and sustainable in enhancing drought resilience among rural communities?

Key Informant Interview (KII) Guideline (Assessing the Role of Community Climate Adaptation Groups (CCAGs) in Enhancing Drought Resilience)

1. What are the main objectives and activities of the Community Climate Adaptation Group (CCAG) in your area?

2. In your opinion, how effectively is CCAG contributing to enhancing drought resilience among rural communities? Please explain with practical examples.

3. What are the major achievements of CCAG in enhancing the adaptive capacity of communities to climate change?

4. What are the major challenges faced by CCAG in implementing drought adaptation activities?

5. How does CCAG ensure the participation of local people in the planning and decision-making processes?

6. What recommendations do you have for further improving the effectiveness and long-term sustainability of CCAG in enhancing drought resilience among rural communities?

Chapter: Nine

9. Reference

Link: **https://scholarhub.ui.ac.id/ajce/vol1/iss2/8/?utm_**

Link: https://www.sciencedirect.com/science/article/pii/S2212420920313662?utm_

Link: https://www.sciencedirect.com/science/article/pii/S2212096317300177?utm_

Link: https://link.springer.com/article/10.1007/s10584-016-1817-8?utm_

Link: Source: ScienceDirect.com https://share.google/hrIfagkAGJeiPks5S

Link: https://link.springer.com/article/10.1007/s10584-024-03838-8?utm_

Link: https://pksf.org.bd/wp-content/uploads/2024/05/ECCCP-Flood-Newsletter_Issue_11-March-2024.pdf?

10. Photo Gallery:



FGD Discussion in Silpara village



FGD Discussion in lokhitara village



Conducting servey interveiws with Respodents



FGD Discussion in Aranagar village





CCAG Members Engaged in Mushroom cultivation