

Local Socio-Economic and Communication Dynamics in Facing Climate Change in Bangkala District, Jeneponto Regency

Alimin Alwi¹

Universitas Negeri Makassar, Indonesia

Najamuddin²

Universitas Negeri Makassar, Indonesia

Nurfauziah Kasmin³

Universitas Negeri Makassar, Indonesia

Corresponding Author: alimin.alwi@unml.ac.id

Abstract

This study aims to analyze the dynamics of local socio-economic and communication in dealing with the impacts of climate change in Bangkala District, Jeneponto Regency. Climate change has brought major challenges to communities, especially in the agriculture and fisheries sectors, which depend on stable environmental conditions. In dealing with these changes, communities develop various adaptation strategies involving economic, social, and communication aspects. This study uses a qualitative approach with a descriptive method, where data is collected through interviews, observations, and documentation to gain a deep understanding of the adaptation strategies implemented by the community. The results of the study show that communities implement various adaptation strategies, such as diversifying income sources, utilizing digital technology to monitor weather and environmental conditions, and strengthening social networks through community cooperation. In addition, community communication patterns have changed from traditional methods to the use of digital media, such as weather applications and online communication groups, which help them in decision making related to agricultural and fisheries activities.

Keywords: Climate Change; Social-Economic; Local Communication; Community Resilience.



INTRODUCTION

Indonesia is a middle-income archipelagic country with many lowland areas and small islands consisting of 17,504 islands, 108,000 kilometers of coastline, and three-quarters of its land area covered by sea. Indonesia is highly vulnerable to the risks of climate change, and is among the top third of countries in the world facing high risks of natural disasters such as rising temperatures, changing rainfall patterns, and rising sea levels. This phenomenon can affect vital sectors such as agriculture, fisheries, and public health (Butarbutar, 2021) . Climate change is a global phenomenon that has an impact on various aspects of human life, including the socio-economic conditions of the community. The climate village program (ProKlim) is a special program from the Ministry of Environment and Forestry (KLHK), this program is an effort by the national government to encourage the involvement of communities and other stakeholders to take action in the form of adaptation and mitigation to address climate change (Fatkhullah et al., 2023).

The impacts of climate change are evident at the local level in socio-economic and community communication patterns. Local communities must adapt to changing environmental conditions, which can impact interpersonal relationships, livelihoods, and social institutions. Changes in rainfall patterns and high temperatures can reduce crop yields in the agricultural sector, which can therefore impact farmer incomes and food security. This can be addressed through local communication techniques and policy analysis used by beneficiaries, both government and companies (Naufal et al., 2023) . In the theory of social adaptation by Roy Rappaport, it is explained that individuals and groups change their interactions, social structures, and behaviors in response to changes in the environment or other external circumstances. To maintain or improve community well-being, social adaptation involves learning, creativity, and modification of accepted norms and values. Social adaptation in the context of climate change refers to strategies used by communities to reduce their vulnerability and increase their capacity to cope with the impacts of climate change. (Kumala Putri & Pandjaitan, 2016) . In a contemporary social perspective, the impact of climate change is associated with environmental degradation and increasing socio-economic disparities. According to *the United Nations Development Programme* (UNDP), people who have less access to information and financial resources are more vulnerable to the impacts of climate change than others.

Therefore, local communication plays an important role in disseminating information related to climate change and adaptation strategies. Communities that have good communication networks, both between individuals and with external parties such as the government and non-governmental organizations, are better able to respond to changes that occur (Silalahi, 2022) . It



is important for the government and related parties to strengthen the communication system and provide broader education to the community so that they are better prepared to face environmental challenges (Minnatul, 2022) . In a study (Fatkhullah et al., 2023) entitled "Adaptation Strategies of Fishermen on Small Islands to the Impacts of Climate Change" stated that fishermen face significant challenges due to climate change and have developed various adaptation strategies to maintain their livelihoods. Another study conducted by (Choirunnisa et al., 2022) entitled "Adaptation of Coastal Fishermen in Pacitan Regency Due to Climate Change" stated that coastal community adaptation to climate change includes environmental, socio-economic, and institutional strategies. Communities have begun to utilize digital technology such as weather applications to determine safer times to go to sea, strengthen social networks through fishermen's cooperatives, and diversify livelihoods to reduce dependence on the fisheries sector. In addition, the role of government policies in supporting access to capital and providing adaptation infrastructure is an important factor in increasing community resilience to the impacts of climate change, which is relevant to conditions in Bangkala District, Jeneponto Regency. This shows that climate change does not only depend on policies and technology, but also on how communities interact, share information, and work together to face existing challenges.

In this study, there is a research gap that needs to be studied more specifically and in depth. Where, the community will adapt to these changes through effective socio-economic and communication mechanisms. However, this adaptation does not always run smoothly and can cause new conflicts or vulnerabilities in society, this creates a gap in understanding how climate change affects local socio-economic and communication dynamics holistically, especially in Bangkala District, Jeneponto Regency. This gap indicates the need for more in-depth research to understand the complexity of the impact of climate change on local socio-economic and communication dynamics in Bangkala District, Jeneponto Regency. By understanding local socio-economics and communication, this research will focus on formulating the main problems that form the basis of the study, namely: (1) how does climate change impact socio-economic conditions and local communication patterns in Bangkala District, Jeneponto Regency? and (2) what strategies are used by the community in dealing with the impacts of climate change in Bangkala District, Jeneponto Regency?

METHOD

This study uses a descriptive qualitative approach, this approach was chosen because it allows for a deep understanding of the experiences and adaptation strategies of the community



in dealing with climate change (Sugiyono, 2020) . The informants of this study were the people of Bangkala District , Jeneponto Regency who were affected by climate change who were categorized as farmers, fishermen, and small business actors. Data collection techniques in this study were observation, interviews, and documentation to obtain comprehensive data on the socio-economic conditions and communication patterns of the community. The data obtained were then analyzed using thematic analysis techniques. To ensure the validity and reliability of the data, this study used triangulation techniques which included cross-verification between various data sources, methods, and informants (Mullany & Stockwell, 2021) .

RESULTS AND DISCUSSION

Climate change is a real challenge that has a wide impact on people's lives in various regions, including in Bangkala District , Jeneponto Regency. To understand more deeply how this phenomenon affects various aspects of local people's lives, this interview was conducted with a resource person who has a deep understanding of the social, economic conditions, and adaptation strategies implemented by Bangkala residents . The results of this interview revealed that climate change not only impacts the agricultural and fisheries sectors as the main source of livelihood for the community, but also brings changes in communication patterns and socio-economic interactions. Long dry seasons, weather uncertainty, and changes in wind and wave patterns have caused a decline in agricultural and fisheries yields, prompting people to seek other economic alternatives.

In addition, this interview also reveals how communities have begun to adapt to climate change through various strategies, such as the use of technology to access weather information, the application of more drought-resistant agricultural techniques, and cooperation between residents in managing water resources. Support from the government and local organizations also plays an important role in helping communities face these challenges. Through this interview, it is hoped that it can provide a clearer picture of the impact of climate change in Bangkala District , Jeneponto Regency and the efforts that have been made to deal with it. Hopefully this information can be used as a consideration for various parties in designing more effective policies and solutions in dealing with climate change in the future.

Impact of Climate Change on Socio-Economic Conditions

Climate change has a direct impact on socio-economic conditions in important sectors that are part of the socio-economy in the community environment such as agriculture, fisheries, and



health, resulting in extreme weather, changes in rainfall patterns, and increased temperatures that can result in decreased productivity in these sectors (Priyanto et al., 2021).

Some of the impacts of climate change on socio-economic conditions such as: (1) increasing socio-economic inequality, One of the most significant impacts of climate change is increasing socio-economic inequality. Natural disasters such as floods, droughts, and storms can have a greater impact on vulnerable groups, especially minorities and the poor. Communities have fewer resources to deal with and recover from disasters because land in disaster-prone areas is often cheaper, and their unpreparedness to leave the area makes them even more trapped in a cycle of poverty (Malihah, 2022). Gender inequality is also affected by climate change. Women are often more dependent on natural resources for their livelihoods, especially in developing countries. They experience more difficulty in maintaining their livelihoods and the well-being of their families as a result of environmental damage (Mustangin, 2017); (2) public health, climate change has a major impact on public health and the ability of communities to withstand the stresses and shocks caused by natural disasters is greatly influenced by pre-existing social networks and support systems, communities with strong social networks recover from shocks faster. Loss of homes, livelihoods, and traumatic experiences due to natural disasters can increase the prevalence of mental health problems such as grief and anxiety. Climate change has a major impact on public health and social systems (Melo & Rahmadani, 2022); (3) and the role of government and public policy, the government has an important role in combating climate change. The government can initiate social assistance programs, provide new skills training, and build more disaster-resilient infrastructure. Strategies based on sustainable environmental policies can also engage communities in efforts to slow climate change. By prioritizing fair and inclusive policies, the government can help reduce the increasing inequality caused by climate change.

Based on interviews with informants, it can be concluded that climate change in Bangkala District, Jeneponto Regency has a significant impact on socio-economic relations between community groups such as increasing socio-economic inequality, public health and the role of government and public policy. One of the most obvious impacts of climate change is socio-economic inequality, one of the impacts of which is the limited water supply during the long dry season. When water resources become increasingly scarce, people with higher socio-economic status will find it easier to obtain clean water supplies. This raises tensions between residents, especially during the longer dry season. The impact of climate change on social diversity in Bangkala District, Jeneponto Regency is twofold. On the one hand, climate change can exacerbate



social tensions, especially in terms of competition for limited resources. However, on the other hand, the crisis faced due to climate change can also encourage strengthening solidarity between residents through cooperation and mutual cooperation. Therefore, it is important to look at both sides in designing policies that support stronger social diversity in facing the challenges of climate change. This study is in line with research (Samin, 2024) which states that greenhouse gas emissions have a significant and positive impact on economic growth, but also pose challenges related to socio-economic inequality. Another study conducted by (Hayatulah et al., 2023) which states that policies that support socio-economic diversity and encourage cooperation between citizens can strengthen community solidarity in facing the challenges of climate change.

The Impact of Climate Change on Local Communication Patterns

Communication is a tool, channel, or means to communicate ideas and concepts, and motivate and encourage people to participate in the process. The five components of communication are communicator, message, media, communicant, and impact that can serve as guidelines for conducting analysis (Paramita et al., 2024) . Direct message delivery or the use of communication media can be used to convey the intended message in a way that can be understood by the communicator or recipient. It is expected that communication will ultimately have an influence, depending on the purpose of its use. The purpose of communication in the context of climate change in local communication patterns is to inform the community, change behavior, realize community participation, and increase community income (Fatkhullah et al., 2023).

According to (Assegaf et al., 2022) , communication plays a key role in social change, including in responding to environmental change. Climate change has had a significant impact on people's communication patterns, especially in how they access and disseminate information about weather and agricultural conditions. In Bangkala District , people who previously relied on traditional methods are now starting to switch to digital technology to obtain more accurate and reliable information. In the past, people used natural signs as weather indicators, such as wind direction, bird behavior, and cloud patterns. However, as climate change makes weather more unpredictable, these methods have become less reliable. As technology advances, people are now increasingly accessing information through social media and weather applications on mobile phones to help them make decisions related to agriculture and fisheries.

Based on interviews, it shows that people in the agricultural and fisheries sectors in Bangkala District , Jeneponto Regency, have switched from analog to digital communication



methods due to climate change. To deal with uncertain environmental conditions, people increasingly rely on social media, online training, and weather applications to obtain faster and more accurate information. In addition to increasing agricultural productivity, this shift makes people more socio-economically resilient to the impacts of climate change. This study is in line with research (Azis & Suryana, 2023) which states that advances in digital technology have had a significant impact on the transformation of the agricultural sector. Digitalization allows farmers to access more precise weather information, soil conditions, and agricultural strategies through *the Internet of Things. Things* (IoT), sensors, and other digital devices. Another study was also conducted by (Johan et al., 2022) which stated that the community has a positive perception of agricultural digitalization, which is considered to be able to increase their independence and welfare.

Community Strategies in Dealing with the Impacts of Climate Change

Prevention strategies are essential to manage climate change so that extreme impacts do not occur. The implementation of adaptation and mitigation strategies is a preventive impact control strategy. Unlike mitigation which requires anticipating problems and taking preventive measures against hazards such as reducing emissions or reducing the impact of flooding by building embankments, adaptation is a reaction to stressors. Mitigation can be carried out for repressive or preventive purposes, while adaptation is mainly focused on repressive measures.

In this case, the application of technology and information is part of the community's adaptation strategy in dealing with the impacts of climate change. The community has begun to use simple technology to monitor weather and sea conditions, so that they can plan fishing activities better. The use of modern communication tools allows for the rapid and efficient dissemination of information among fishermen and farmers (Novita, 2018). In addition, the community uses social relationships and community networks as an adaptation strategy. By maintaining good relationships between fishermen and other community groups, they can share information about weather conditions, effective fishing techniques, and potential new fishing areas. This collective approach increases their adaptive capacity to environmental change (Silalahi, 2022). The community in Bangkala District, Jeneponto Regency, faces the impacts of climate change through various adaptation strategies that are tailored to their local conditions. One of the main approaches is the diversification of economic activities. Coastal communities, for example, do not only rely on fishing but also develop other businesses such as pond cultivation or small-scale trade. This diversification aims to reduce the economic risk due to the uncertainty of catches



affected by climate change. Overall, the adaptation strategies implemented by the community in Bangkala District, Jeneponto Regency reflect collective and innovative efforts in dealing with the impacts of climate change, by utilizing local resources, social networks and available technology.

Based on the results of interviews with the community in Bangkala District, Jeneponto Regency, it was found that they implemented various adaptation strategies to deal with the impacts of climate change. These strategies are divided into several main aspects, namely in the agricultural sector, fisheries, and social and communication aspects. In the agricultural sector, farmers have begun to change their planting patterns by using plant varieties that are more resistant to drought and pests. Some farmers use weather information from digital applications or social media to determine more appropriate planting times to avoid crop failure due to extreme weather. In the fisheries sector, local fishermen have begun to rely on digital technology such as weather predictions to determine safer and more productive fishing locations. They also use more environmentally friendly fishing gear and form fishing groups to increase access to capital and modern fishing gear. Then from a social and communication perspective, the community is increasingly strengthening social networks through farmer groups and fishermen's cooperatives. And in terms of communication, farmers and fishermen now use social media, community WhatsApp groups, and online training more often to obtain the latest information on climate change, adaptation strategies, and agricultural and fisheries innovations. This study is in line with research by (Priyanto et al., 2021) which states that farmers who implement adaptation strategies experience increased harvest productivity and higher income compared to farmers who do not implement adaptation strategies. Another study conducted by (Handika, 2024) which states that the area of land owned by farmers is correlated with the level of adoption of sustainable agriculture. Farmers with larger land areas are more likely to implement sustainable agricultural innovations, including the use of more efficient irrigation systems and the integration of agriculture with livestock.

CONCLUSION

This study reveals that climate change has affected the socio-economic conditions and communication patterns of communities in Bangkala District, Jeneponto Regency, especially in the agriculture and fisheries sectors. Communities respond to this challenge with various adaptation strategies, such as diversification of livelihoods, use of digital technology in agriculture and fisheries, and strengthening social networks to increase community resilience in facing climate change. The transformation of communication patterns from traditional systems to digital



technology, such as the use of weather applications and social media, has helped communities obtain more accurate information in dealing with uncertain environmental conditions. However, obstacles such as limited digital infrastructure and low technological literacy remain challenges. Therefore, collaboration between communities, government, and the private sector is needed to increase access to technology and resources, in order to strengthen the socio-economic and communication resilience of communities to the impacts of climate change.

REFERENCE

- Assegaf, A.H., Faizin, F., & Tandio, T. (2022). Understanding Environmental Communication and Framing as a Practice of Social Change. *WACANA: Scientific Journal of Communication Science*, 21 (1), 120–129. <https://doi.org/10.32509/wacana.v21i1.1831>
- Azis, M., & Suryana, EA (2023). Comparison and Implementation of Agricultural Digitalization Policy: Opportunities and Challenges. *Agricultural and Environmental Policy Brief Formulation of Strategic Studies in the Field of Agriculture and the Environment*, 10 (3), 179–198. <https://doi.org/10.29244/jkebijakan.v10i3.51083>
- Butarbutar, T. (2021). Social Dimensions of Climate Change in Indonesia. *Journal of Forestry Policy Analysis*, 9(1), 1–8. <https://dlh.bulelengkab.go.id/informasi/detail/artikel/perubahan-iklim-climate-change>
- Choirunnisa, LAD, Purwaningsih, Y., & Prasetyani, D. (2022). Adaptation of Coastal Fishermen in Pacitan Regency Due to Climate Change. *Journal of Region and Environment*, 10 (2), 166–181. <https://doi.org/10.14710/jwl.10.2.166-181>
- Fatkhullah, M., Mulyani, I., Dewi, AS, Habib, MAF, & Reiham, A. (2023). Communication Strategy in Addressing Climate Change through Community Involvement. *Journal of Development Communication*, 21 (3), 17–33. <https://doi.org/10.46937/21202341909>
- Handika Saad. (2024). Adaptation to Climate Change Impacts Through Adoption of Sustainable Agriculture. *Journal of Agricultural Extension*, 19 (1), 1–11. <https://doi.org/10.51852/jpp.v19i1.755>
- Hayatulah, GE, Mahasari, J., Ihsan, M., Wicaksono, MBA, & Alhamda, S. (2023). Environmental Policy in Responding to Climate Change Problems in Indonesia: An Integrative Review. *Ministrate: Journal of Bureaucracy and Regional Government*, 5 (2), 266–276. <https://doi.org/10.15575/jbpd.v5i2.28548>
- Johan, D., Maarif, MS, & Zulfainarni, N. (2022). Farmers' Perceptions of Agricultural Digitalization to Support Farmers' Independence. *Journal of Management and Business Applications*, 8



- (1), 203–216. <https://doi.org/10.17358/jabm.8.1.203>
- Kumala Putri, EI, & K Pandjaitan, N. (2016). Impact of Climate Variability and Adaptive Mechanisms of Farming Communities in Dry Climate Areas (Case of Boronubaen Village and Taunbaen Timur Village, North Central Timor Regency, East Nusa Tenggara). *Sodality: Journal of Rural Sociology*, 4 (2), 1–6. <https://doi.org/10.22500/sodality.v4i2.13383>
- Malihah, L. (2022). Challenges in Efforts to Address the Impacts of Climate Change and Support Sustainable Economic Development: A Review. *Journal of Development Policy*, 17 (2), 219–232. <https://doi.org/10.47441/jkp.v17i2.272>
- Melo, RH, & Rahmadani, NA (2022). Impact of Climate Change on Human Health. *Journal of Geographical Research (GeoJPG)*, 1 (1), 40–45. <https://doi.org/10.34312/geojpg.v1i1.26522>
- Minnatul Maula, AR (2022). Dynamics of Socio-Economic Change in the Panggungharjo Village Community (Descriptive Study of Socio-Economic Change Before and After the Existence of Bumdes Panggung Lestari). *Journal of Development and Social Change*, 5 (2), 1–23. <http://www.nber.org/papers/w16019>
- Mullany, L., & Stockwell, P. (2021). Qualitative, quantitative and mixed methods research (Dörnyei). In *Introducing English Language*. <https://doi.org/10.4324/9781315707181-60>
- Mustangin, M. (2017). Climate change and action to face its impacts: Reviewed from the role of women in Pagerwangi Village. *Journal of Education and Community Empowerment*, 4 (1), 80–89. <https://doi.org/10.21831/jppm.v4i1.13051>
- Naufal, ML, Rahmawati, E., Bilkis Kuds, S., & Darmawan, I. (2023). Dynamics of Social Change and Its Impact on Sustainable Development: A Multidisciplinary Perspective. *Madani: Multidisciplinary Scientific Journal*, 1 (7), 185–190. <https://doi.org/10.5281/zenodo.8205488>
- Novita, D. (2018). Climate Change Adaptation Policy in the Agricultural Sector (Evaluation of Training of Trainers in Jeneponto Regency, South Sulawesi). *AKP Journal*, 8 (1), 1–25. <https://www.researchgate.net/publication/353195111>
- Paramita, EP, Suadnya, IW, Riyayanatasya, YYW, & Kunci, K. (2024). Analysis of Communication Network Patterns in the Implementation of Worship Tradition as an Adaptive Strategy of Indigenous Peoples in Facing Climate Change in North Lombok Regency. *JSEH (Journal of Socio-Economics and Humanities)*, 10 (3), 551–557. <https://doi.org/10.29303/jseh.v10i3.671>
- Priyanto, M., Toiba, H., & Hartono, R. (2021). Climate Change Adaptation Strategy: Influencing



- Factors and Benefits of Its Implementation. *Journal of Agricultural Economics and Agribusiness (JEPA)*, 5 (4), 1169–1178. <https://doi.org/10.21776/ub.jepa.2021.005.04.19>
- Samin Saputra, DB (2024). Impact of Climate Change on Economic Growth Using Factor Analysis. *Nusantara: Journal of Social Sciences*, 11 (5), 2118–2128. <https://doi.org/10.31604/jips.v11i5.2024.2118-2128>
- Silalahi, ER (2022). Coastal Community Adaptation Strategy to Climate Change Impacts. *Journal of Spatial Studies*, 4 (2), 185–196. <https://doi.org/10.30659/jkr.v4i2.39777>
- Sugiyono. (2020). Quantitative, Qualitative and R&D Research Methods. In *Alvabeta*. CV . https://www.academia.edu/118903676/Metode_Penelitian_Kuantitatif_Kualitatif_dan_R_and_D_Prof_Sugiono

