

# Assessing the Effects of Environmental Management, Policy, and Sustainability in the Gambella Region: The Case of Gambella Town

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## ABSTRACT

This paper has endeavored to assess effects of environment management, policy, and sustainability in the Gambella region, in relation to Gambella town. The research objectives entailed identifying problems related to the town's environmental management, the measurement of the effects of environmental management, policy, and sustainability, and the review of the regulations and policies by the government of environmental management and efficiency of the roles of the stakeholders in improving the issues of environmental management and sustainability. The current study is based on quantitative and qualitative studies, which are descriptive in character. The sample size of the respondents was 165; the response rate was 95.7, and 4.2 was non-response. The study found that significant issues were being experienced in environmental protection, which involved the government, stakeholders, community, and individuals. These were some of the problems that delayed the appropriate management of the environment in Gambella town. The findings indicate that the effects have both adverse and beneficial effects on environmental protection. Even though the results were positive, some issues caused the impact on the efficiency of environmental management practices and sustainability. The government was already formulated on environmental management and environmental sustainability laws and policies, but these policies and laws had limitations on how they could be implemented and enforced, and this limited their effectiveness in being able to affect the real actions of environmental protection. Environmental protection was highly criticized by the stakeholders.

**Keywords:** Assessing; Environmental Management; Policy, Sustainability; Environmental Impact; Land Management

## INTRODUCTION

Ethiopia appears to be one of the African states that are least developed despite having the fastest-growing economies. It is indeed a nation with the largest number of natural resources in the world. The primary origin of revenue and economic activity and the resident of the environment rely on it to survive and make money (Shiferaw, 2017). Environmental policies and regulations do not lead many farmers or individuals who rely on the environment as a livelihood place and as a means of food security and economic considerations, and they merely misuse the environment without considering its sustainability in the future (Meyfroidt, 2018).

The agricultural expansion exists as one of the development sectors in most places in Ethiopia that is supported by the environment as the force behind economic growth. The government endeavors to ensure that the country is environmentally sound and to improve both the economic system in the country and the way of life of the people, but the government and people in the region do not give much concern to environmental regulation and protection. Food insecurity, deforestation, and war have been a problem due to the dependency of countries on the environment (Bachewe et al., 2018).

The Gambella region is one of the regions of Ethiopia; it is the area that lacks the best environmental management and sustainability in comparison with other parts in Ethiopia. Gambella is a region that is well endowed with

natural resources in terms of fishery, cattle, and minerals, and the locals rely on the resources as a source of their capital and a foundation of their livelihood (Regasa et al., 2023).

According to Azeb and Wolframe (2017), agriculture was identified to reduce poverty, increase income, improve food security, and capital profits. However, to make the country alive, the government and separate farmers constructed the framework of laws on the administration of the environment, allocation of resources, and decision-making procedures involved in the creation and operation of a farm in the region.

Environmental issues in the area have caused the degradation of the environment, deforestation, waste disposal, pollution, and depletion of natural resources for humans and wildlife. This has contributed to a shortage of clean drinking water, recycling, and overfishing, among other environmental hazards. However, it also had a negative influence on the ecosystem because of human activity and natural disasters that caused the extinction of wildlife, deforestation, and inadequate disposal of property waste (Azeb & Wolfram, 2017).

The main objective of this research is to assess the effects of environmental management, policy, and sustainability in the Gambella Region, focusing on Gambella Town. To identify the challenges that relate to environmental management in Gambella Town. To assess the effect on environmental management, policy, and sustainability in Gambella town. To explore Gambella's government policies and regulations for environmental management and sustainability. To determine the effectiveness of the responsibilities of stakeholders in establishing environmental management, policy, and sustainability in Gambella Town.

## LITERATURE REVIEW

Environment remains a state of factors, influences, cultural influences, and natural aspects that surround and define the existence of individuals or a group of people. Nonetheless, it takes different forms based on ecology, chemistry, plant science, zoology, minerals, oceanography, limnology, soil, geology, physical geography, and atmosphere (Harper & Snowden, 2017).

Forests in Ethiopia are well-endowed resources, occupy 35 percent of the total land area, and have immense environmental and socio-economic values; yet they are being cleared at a high rate. The increasing population has also resulted in massive clearing of forests to facilitate agricultural activities, overgrazing, and exploitation of the available forests in the use of fodder, construction materials, and fuel wood. But the forests in the country are deforested because of poverty, economic reasons, globalization, overgrazing, and the exploitation of fuel as a source of income, leading to a shortage of rainfall, the extinction of biodiversity, land degradation and the small size and overuse of parks by expanding its investments among other environmental effects (Sisay & Gitima, 2020).

The Gambella setup was vast, especially in land utilization, and it is of great benefit to both man and animal and other living beings; it contributed to the human and animal biodiversity by availing a variety of commodities, raw materials, and ecosystems. Most of the countries depend on resources to carry out their economic growth such as construction materials and energy. Land is important in terms of food, carbon capture, maintenance of soil quality, and biodiversity habitat (Azeb & Wolfram, 2017).

The effects of drought on the community of our country, as well as on small-scale farmers, were terrible, and it negatively influenced the lives of those who reside in the environment. But most environmental creatures lacked access to water, rain, or green plants and could not possibly develop their farms, and due to insufficient technological development in forest management, environmental protection, and agriculture, some areas were affected due to the drought in the country (Lottering et al., 2021).

The natural resources' economic development had been accessible to people; the government produced energy; other communities provided a source of income to many people; and other people provided potable water. Nevertheless, natural resources were benefiting society and people involved, especially at Gambella in a broad manner. Nonetheless, natural resources have a vast array of advantages to society and individuals, especially in

Gambella. The moderate-income earners employed charcoal as a capital to earn a living, and others, on the other hand, employed the use of wood, animals, and their earnings (Barbier, 2019).

## **THEORETICAL FRAMEWORK**

Environmental monitoring is a philosophy of environmental management as part of studying the environmental conditions and trends to facilitate policy formulation and execution, as well as coming up with data to be reported to lawmakers at the national and international levels, as well as the people at large (Awange & Kiema, 2018).

Environmental planning is an environmental protection process in which the biodiversity, social, political, economic, and governance factors are taken into consideration to facilitate decisions-making and policies on environmental development and give a holistic framework of having sustainable development impacts. Yet, planning theory refers to a policy and decision-making framework of environmental protection, which is interested in political, economic, and governance issues to ensure sustainable development of the nation (Allison et al., 2021).

It is meant to make sure that these resources are not only available to the present generation but also to the future generations. It engages in sustainable activities to balance environmental health and bring sustainable co-existence between people and nature. It involves a compromise on ecological, economic, and social objectives like reducing carbon emissions, greater renewable energy, equitable distribution of available resources, and creation of environmental awareness to involve everyone in the protection process. Nevertheless, the basis of environmental sustainability concerns principles and policies, according to which future generations will have equal or more opportunities to inhabit the planet without causing any environmental harm (Ramadhani et al., 2022).

## **METHODOLOGY**

### **Research Philosophy**

In scientific studies, “paradigm” is a term used to denote the philosophy of the order of ideas or worldview, which is the universe of thought. The ideas are arranged into a more systematic form, and this is the way of thinking. The combination of concepts in a meaningful manner results in the improvement of data interpretation and thinking perspectives (Khatri, 2020).

### **Research Design**

Research design is the method of solving research questions depending on the data that is gathered and deals with the question of who, what, and the way that the research will be undertaken and with the answer too. In some cases, it depends on the organization of the data, the questionnaire and the research participants. Research design refers to the method through which data on research is gathered and analyzed in a structured way according to the purpose of the research. Nevertheless, the knowledge of the research, the way the research participants are approached, and the outcome of the study (Sileyew, 2019).

### **Data Collection**

Data collection is the study of the process of synthesizing, organizing, and acquiring information from various sources to assess and come up with defensible conclusions. This can be through data collection where various methods can be applied, including primary and secondary data collection. Data collection is, however, the systematic procedure of collecting, preparing, processing, and accessing data from different sources and formats in the research. There are many methods of collecting data to conduct research; they can be surveys, interviews, experiments, and observation (Taherdoost, 2021).

### **Data Analysis**

The processes of data collection, organization and interpretation of the data require data analysis during research.

Both descriptive and inferential statistics were used in assessing the research data after subjecting the data to many analytical methods. The inferential statistics were applied to provide the study hypotheses and predict the association between the defendant and predictor variables, whereas descriptive statistics were applied to provide such measures as mean, standard deviation, minimum, and maximum (Citerio et al., 2015).

### Ethical Consideration

Scientific misconduct in a study is described as breaking the customary regulations of scholarly behavior and ethical presentation in releasing specific scientific research. A Scientific integrity violation is linked with a violation of the scientific process and research ethics in science, such as research design, implementation, and reporting. Any research misconduct is the breach of the rules and principles of the research standard, and misconduct during the research led to the rejection of the research by researchers and scholars (Zhaksylyk et al., 2023).

## RESULTS

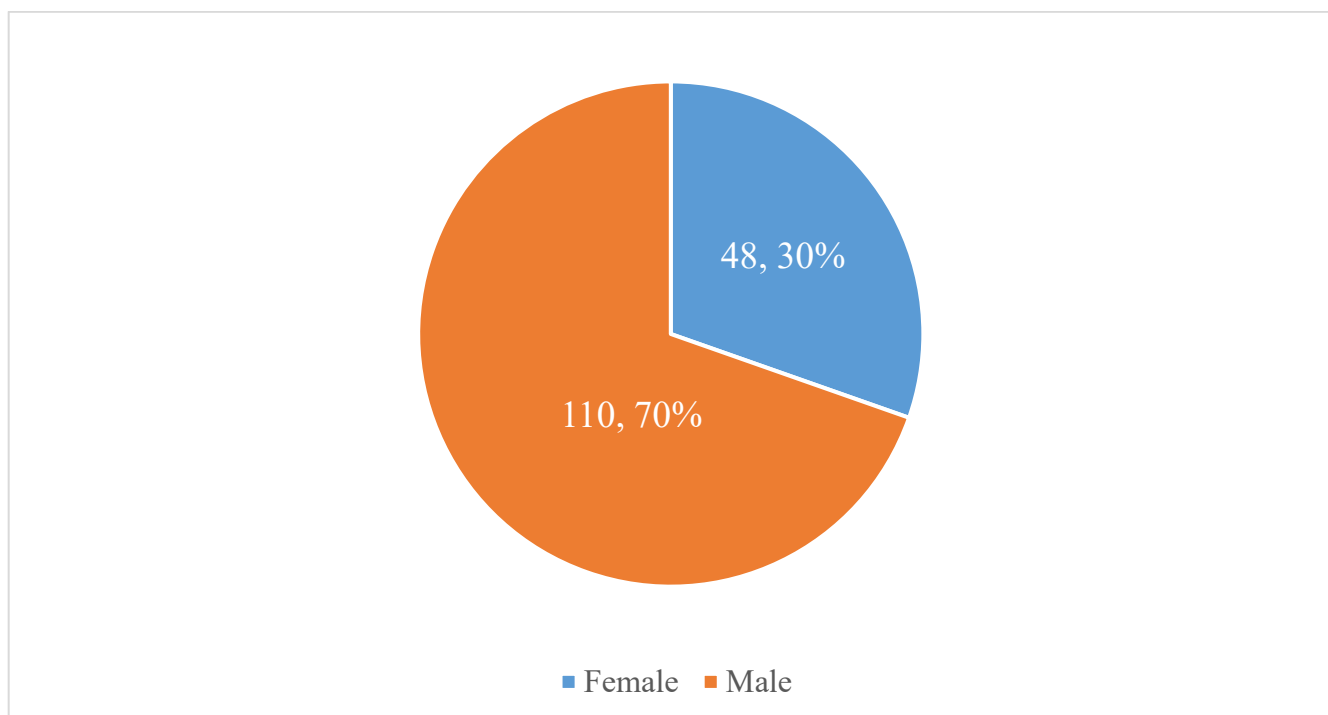
**Table 4.1: Response of the Respondents**

S/N	Description	Category	Frequency	Percentage (%)
1	No. of Respondents	Valid	158	95.7%
		Missing	7	4.2%
	Total		165	100%

**Source:** Author (2025)

In the study, 165 questionnaires were distributed to respondents, with 158 participants responding. This resulted in a response rate of 95.7%. Only seven respondents were not reached, indicating a 4.2% non-response rate. The high response rate suggests that the study's approach was effective and that the findings are likely to be accurate, as only a small number of participants were missed.

**Figure 4.1: Gender of the Respondents**



**Source:** Author (2025)

In the study, a total of 158 respondents were reached. Among them, 110 were male, while forty-eight were family members. This indicates that approximately 69.6% of the respondents were male, and 30.3% were family members. The data show that male participants made up a larger proportion of the respondents in the study on Environmental Management, Policy, and Sustainability.

### **Challenges related to Environmental Management**

In Gambella, other communities pointed out that the area experiences bad waste management, and the residents do not have the proper knowledge and understanding of waste management issues. They do not acknowledge the fact that environmental management is important to the community. Also, inappropriate and illegitimate waste disposal styles have led to diverse environmental problems, which, consequently, have caused health complications to the population.

The modern-day environmental issues are having a severe impact on human beings and wildlife. Such problems as the decreased biodiversity, the deteriorating ecosystem services, and low natural resilience are becoming frequent. This has led to a decline in the quality of life in many communities and the inability to live with disruptions particularly those that are associated with climatic changes (Goudie, 2018).

### **Effect on Environmental Management, Policy, and Sustainability**

The key information in the study revealed that environmental protection can be used to enhance better air quality through alternative transportation and testing of toxins and cooling of homes to ensure a comfortable and safe environment. It is also associated with marketing healthy food options and the promotion of time spent in the green areas to decrease stress and ensure relaxation. Nevertheless, the environment greatly influences human health and nature, and its effects can lead to better lives for people as it gives them access to good food and a healthy environment in the community.

The environment is imperative in ensuring clean air, a stable climate, proper water, sanitation and hygiene, safety with chemicals, radiation protection, healthy and safe working environments, and good agricultural practices. In this regard, environmental protection contributes to societal health significantly by controlling and treating physical, chemical, and biological factors having an impact on health, although they do not always fall under the direct control of an individual. Having a clean environment enables people to exist in good environments and have a better quality of life (Awewomom et al., 2024).

### **Government Policies and Regulations**

The government is also anticipated to spend more on environmental-related projects in the region so that its presence in the area is equitable, efficient, and corruption-free in the environmental protection activities in the area (O’Faircheallaigh, 2015).

Government support for environmental protection has been of much benefit to the individual, community, and stakeholders as they have been able to work effectively and efficiently towards the safety of the environment. It also encouraged awareness and education among the community to support the regional economy through a cut in the emission of greenhouse gases and with early warning systems against possible disasters in the region (Bennett et al., 2016).

### **Effectiveness of the Responsibilities of Stakeholders**

Environmental protection stakeholders are critical towards the enhancement of environmental safety, the formulation of new policies regarding environmental management, and regulations to enhance the environmental economy towards community development. Hence, they participate in community interactions and awareness to successfully quantify and improve environmental protection, which includes the community in environmental protection (Bennett et al., 2016).

## DISCUSSIONS

Nevertheless, implementation issues are still evident, even in the context of the development of such plans within communities. This has been compounded by the absence of complete community involvement and dedication, which has negated further development, and the failed execution of conservational rules, guidelines, and strategy mechanisms by both the officiality and administration organizations (Keeley et al., 2019).

The community was noted to be part of environmental management and has a critical role in environmental protection. Nevertheless, their active involvement in holding meetings to affect environmental protection was a prerequisite. They also consulted with each other on how they can proceed with the mechanisms of environmental protection and alleviate the effects of environmental disasters in the community.

Environmental legislation concerns the quality of water, waste management, and the safety of chemicals as well as the conservation of the regionally threatened species. Nevertheless, the community failed to understand these regulations and acts, as well as their importance in mitigating the negative effect of human activities on environmental decontamination in the area. Thus, enhancing their understanding of environmental laws, the community would be in a better position to safeguard human health as well as protect the environment in favor of the future generation and help the region develop sustainably (Kolawole & Iyiola, 2023).

Environmental activities such as community participation are critical in the sustenance of livelihoods, agriculture, and water treatment, among other environmental protection features. To operate successfully and efficiently, the community must have a methodological framework that will assist them to utilize their resources wisely and conserve the environment eventually gaining environmental protection and health and economic benefit to the nation. As a result, the community ought to embrace the right tools and methodologies of environmental protection to achieve the sustainability of the activities (Mariyam et al., 2023).

### Limitations

This study has several limitations that must be acknowledged. First, sampling bias may have affected the representativeness of the research, as the participants selected might not fully reflect the broader population. Second, issues of measurement validity could have influenced the accuracy of the research results, since the instruments used may not have captured all aspects of the variables under research. Third, methodological constraints, such as limited resources, time restrictions, and reliance on self-reported data, may have introduced errors or reduced reliability. These limitations suggest that caution should be exercised when interpreting the findings of the research. Future research should aim to minimize sampling bias, employ more robust measurement tools, and adopt diversified methodologies to strengthen the validity and reliability of the study.

## CONCLUSIONS

The involvement of a community is essential in the process of protecting the environment over the long term. Engaging and informing communities increases the chances of them engaging in practices that are sustainable, limiting waste, conserving resources, and being responsible for the environmental impact of their activities in their day-to-day operations. Nevertheless, to occur, the government, environmental organizations, and other stakeholders need to make positive initiatives to engage the community.

The government is at the center of enhancing environmental protection by engaging in the enforcement of regulations and policies. Such laws are supposed to be aimed at the preservation of ecosystems and resources, minimization of pollution and sustainable practices. Good environmental policies give guidelines through which all stakeholders will work, such that conservation will be in line with the overall environmental objectives.

The impact of introducing the rules and regulations concerning environmental issues in the community was positive since the community gave a positive response and accepted executing the policies. The knowledge of the regulations and legislation involved the participants and encouraged them to incorporate intervention measures, and this influenced them to enhance environmental protection in their town (Sileyew, 2019).

The involvement of stakeholders in cooperation is very important in the process of community-based sustainable environmental activities. They should also interact and collaborate with known members of the community, including local organizations like service providers and the police, to resolve issues related to the environment, including poor use of charcoal in society.

## RECOMMENDATIONS

The government should launch comprehensive public awareness campaigns to inform the community about the importance of environmental protection and specific policies in place to safeguard the environment. These campaigns could utilize various media channels, community meetings, and educational programs to reach a broad audience.

### Future Research Directions

Examining the effectiveness of existing environmental laws and regulations across different countries and regions and identifying gaps in enforcement or loopholes that could hinder sustainability goals.

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