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ADAPTING FARMING TO CLIMATE RESILIENCE IN KAINAKARY

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ABSTRACT----------
This paper investigates climate-resilient farming in flood-prone Kainakary, focusing on paddy cultivation. Flood-induced disruptions have impacted property, livelihoods, and agriculture. The study identifies challenges faced by farmers and proposes actionable recommendations. Survey data from Kainakary highlights that floods affected 79% of residents, damaging property and belongings. Moreover, 93% experienced livelihood setbacks, particularly paddy farmers facing crop loss, infrastructure damage, seed shortages, and financial instability. To enhance climate resilience, the paper suggests implementing comprehensive crop insurance, reliable crop advisories, climate-tolerant seeds, improved infrastructure, seed banks, storage, and early warning systems.

INTRODUCTION

Kainakary, a village in Kuttanad, is known for its paddy cultivation, and a significant portion of the population derives their livelihoods from this practice. [1][2][3][4]Since 2018, natural disasters, particularly floods, have been reported frequently in this region. As a result, they have a profound impact on livelihoods, especially within the agricultural sector. In the context of Kainakary, a flood-prone region, it is crucial to understand the effects of such disasters on livelihoods, with a specific emphasis on agriculture, particularly paddy cultivation.

Through a livelihood impact assessment, this study aims to assess the impact of floods on property, belongings, and livelihoods. The surveys have revealed that paddy farmers are highly vulnerable to floods, highlighting the need to promote climate-resilient agriculture.

OBJECTIVES OF THE STUDY

- To understand the challenges faced by the people in Kainakary during flood.
- Recommendations for climate-resilient farming practices.

METHODOLOGY OF THE STUDY

Both primary and secondary data have been utilized throughout the study. The primary data were collected from Kainakary, situated in the Kuttanad region of Alappuzha District. A total of 35 samples were gathered from Kainakary village. Primary data was collected through questionnaires and personal interviews. The secondary data were collected from various scholarly articles, newspapers, journals, and other relevant sources. The collected data were analyzed in Excel using tools such as pie charts and percentages.

RESULTS AND ANALYSIS

1. Impact on property and belongings

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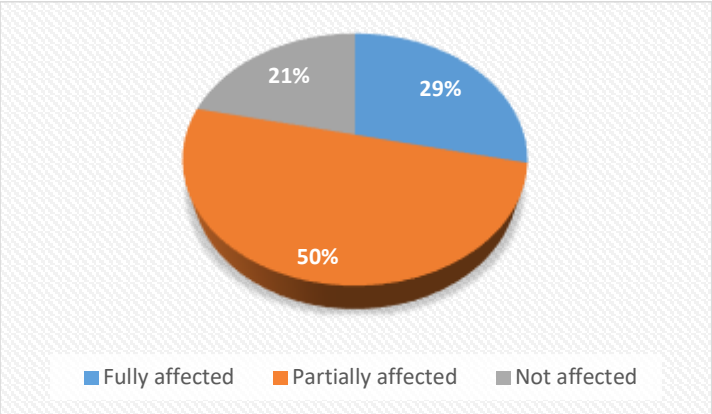


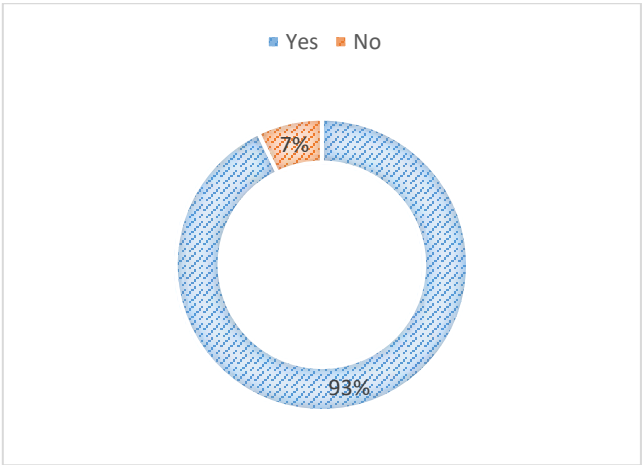
Based on the survey, it was found that 79% of the people in Kainakary were affected by floods, leading to an impact on their properties and belongings.

The following responses from the interviewees were gathered:
Pushparaj, a paddy farmer from Kainakary, mentioned that frequent flooding has resulted in damage to their homes and personal belongings. A significant portion, 29% of the population, experienced complete home loss, including household appliances such as refrigerators and televisions.

Rama Ponnapan, a small-scale trader, stated that both governmental and non-governmental organisations have played crucial roles in providing support to access essential services during and after floods. Government-operated relief camps offer accommodations, food, water, and clothing to those in need.

Non-governmental organisations have also contributed by providing food and other necessities like first aid kits, sanitary napkins, and clothing. Additionally, the government has extended financial assistance for house maintenance and the reconstruction of fully damaged homes. The people express satisfaction with the support and services provided by both the government and non-governmental organisations.

2. Impact on livelihood



The chart reveals that 93% of the population was affected by floods, impacting their livelihoods, while 7% remained unaffected.
During interviews, participants emphasised that floods have a significant impact on livelihoods, particularly those of paddy farmers.

List of problems:
1. Crop damage and loss

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2. Damage to infrastructure like irrigation systems, bunds, farm equipment and machinery.
3. Seed shortage for next planting seasons.
4. Problems faced during procurement of harvested paddy due to water content in paddy crops.
5. Financial instability. Farmers faced challenges in repaying their bank loans.
6. Increased weeds and pest attacks.
7. Loss of livestock like cattle, poultry, and duck framing.

RECOMMENDATIONS

"Agricultural Climate Resilience refers to the ability of an agricultural system to anticipate and prepare for, as well as adapt to, absorb, and recover from the impacts of change and extreme weather" (Usha S, Sridhar R,). Presented below are suggestions to enhance the approach of paddy farming practices in Kainakary, an area susceptible to flooding.

1. Crop Insurance for Farmers:

Implementing a comprehensive crop insurance programme can provide a safety net for farmers in the event of crop failure due to extreme weather events. This initiative would alleviate the financial burden on farmers and incentivize them to adopt innovative techniques without fearing substantial losses.

2. Crop Advisories:

Establishing a robust system for disseminating timely and accurate crop advisories can significantly assist farmers in making informed decisions about planting, harvesting, and pest management. These advisories, based on weather forecasts and agricultural expertise, can help optimise crop yields and minimise losses.

3. Consistent Soil Testing Facilities:

Access to consistent soil testing facilities allows farmers to understand their soil's nutrient composition and structure.

4. Tolerant Seed to Withstand Climate Variability:

Promoting the use of climate-tolerant seed varieties is crucial. These seeds are raised to withstand varying climatic conditions, reducing the vulnerability of crops to extreme weather events and ensuring more stable yields.

5. Proper agriculture infrastructure facilities like bunds and irrigation systems:

Developing proper agricultural infrastructure such as bunds (embankments) and efficient irrigation systems can help manage water resources effectively. This prevents flooding and waterlogging during heavy rainfall.

6. Seed Bank and Storage Facilities for Collecting Harvested Paddy:

Establishing a seed bank and proper storage facilities for harvested paddy ensures that quality seeds are available for subsequent planting seasons. Proper storage prevents the deterioration and contamination of seeds, contributing to improved crop quality and yield.

7. Early Warning System:

Implementing an early warning system that relies on meteorological data and monitoring equipment can provide timely alerts about impending weather-related disasters. This system empowers farmers and local authorities to take preventive measures, evacuate if necessary, and protect both crops and human lives.

These recommendations collectively create a multi-faceted approach to enhancing climate resilience and agricultural productivity in Kainakary. By addressing various aspects of agricultural management, infrastructure, and preparedness, these strategies can lead to a more sustainable and secure agricultural future for the region.

CONCLUSION

In conclusion, this research sheds light on the profound impact of floods on the livelihoods of the people in Kainakary, particularly within the agricultural sector. The findings emphasise the vulnerabilities faced by paddy farmers and the need for implementing climate-resilient farming practices. The study's objectives were met through a comprehensive livelihood impact assessment that highlighted challenges faced by floods on property, belongings, and livelihoods. The results underscore the urgent requirement for adaptive strategies to enhance climate resilience in the region.

Expanding the scope of this study to encompass various sectors holds great promise for the broader community. The strategies outlined here are not limited to agriculture alone; they can serve as a blueprint for boosting climate resilience across diverse sectors. As Kainakary's journey towards climate resilience progresses, it will contribute to a more holistic and robust foundation for the region's sustainable development, providing a valuable model for other flood-prone areas to follow.

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