



**ALTERNATIVE LIVELIHOOD OPTIONS AND WILLINGNESS
TO SHIFT FROM *KAINGIN* AMONG OCCUPANTS
OF THE PROTECTED AREA**

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ABSTRACT

This study examined alternative livelihood options and the willingness to shift from *kaingin* (slash-and-burn agriculture) among the occupants of the Pan-ay River Watershed Forest Reserve (PRWFR). Using a descriptive-correlational research design, data were collected from one hundred (100) respondents through a structured survey questionnaire. Statistical analysis revealed a significant relationship between alternative livelihood options and the willingness to shift from *kaingin*, indicating that positive perceptions of alternatives strongly influence behavioral change. However, despite this willingness, *kaingin* remains prevalent due to persistent barriers such as limited market access, financial risk aversion, inadequate infrastructure, a lack of technical knowledge, and socio-cultural attachments to traditional practices. The study concluded that while alternative livelihood programs are promising, their success depends on strengthening market systems, capacity-building efforts, infrastructure development, and institutional support to ensure sustainable adoption and reduce dependence on environmentally destructive practices.

Keywords: *Kaingin, Alternative Livelihood, Willingness to Shift, Protected Area*

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INTRODUCTION

Established on June 28, 1990, by President Corazon C. Aquino under Presidential Proclamation No. 599, the Pan-ay River Watershed Forest Reserve (PRWFR) was designated as a protected area to safeguard water yields and curb unsustainable land use and forest exploitation. Located in the Municipality of Tapaz, Capiz, on Panay Island, the reserve encompasses approximately 4,350 hectares. Its jurisdiction extends across nine specific barangays: Abangay, Acuña, Aglinab, Daan Norte, Daan Sur, Lahug, Nayawan, Roxas, and Tacayan.

Significant to the proclamation is the mandate to curb inappropriate forest exploitation and disruptive land-use practices. Among these, *kaingin* (slash-and-burn farming) has been repeatedly identified as one of the most persistent threats to the ecological integrity of the protected area. Findings from the Protected Area Suitability Assessment (PASA) conducted by DENR-CENRO Mambusao personnel in 2017 revealed that around 507.686 hectares approximately 12% of the total land area were already open and cultivated indicating significant forest cover conversion attributed largely to *kaingin* activities.

Despite explicit legal restrictions under Republic Act 7586 or the National Protected Areas System (NIPAS) Act of 1992, amended by Republic Act 11038 or the Expanded NIPAS (ENIPAS) Act of 2018 particularly Section 20, item (i) which prohibits *kaingin* or, in any manner, causing forest fires inside the protected area, many occupants continue to rely on slash-and-burn farming as their primary means of subsistence. This situation reveals a

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persistent conflict between environmental protection goals and socioeconomic realities within forest-dependent communities.

The detrimental effects of *kaingin* extend beyond forest loss, contributing biodiversity decline, soil erosion, watershed degradation and reduced water yield, issues that are becoming increasingly urgent in the context of climate change. As these environmental pressures intensify, the need for sustainable, inclusive solutions that address both ecological and livelihood concerns grows more critical.

In response, government agencies and partners have introduced various alternative livelihood programs aimed at reducing dependency on *kaingin*. These include agroforestry initiatives, sustainable agricultural practices, livestock production, handicraft enterprises, ecotourism participation and skills-based training. While these programs offer promising pathways for both income generation and conservation, their actual adoption remains varied across communities. Many occupants continue to practice *kaingin* due to concerns about profitability, labor intensity, cultural norms, market access and the perceived reliability of alternative livelihoods.

A deeper understanding of these factors is essential. Assessing the perspectives of PRWFR occupants can provide valuable insights into the motivators and barriers influencing livelihood choices and their willingness to shift toward sustainable alternatives. The result of this study may guide DENR, the Protected Area Management Board (PAMB), Local Government Units (LGUs) and other stakeholders in refining livelihood interventions and strengthening for protected area management.

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MATERIALS AND METHODS

Research Methodology

The researcher used a descriptive-correlational survey design. The descriptive component identified and summarized the existing characteristics, awareness, and perceptions of the respondents while the correlational component examined the degree of relationship between their perspectives on alternative livelihood strategies and their willingness to shift from *kaingin*. Survey questionnaires were administered to gather voluntary, honest responses, making this design suitable for analyzing naturally occurring data without manipulating any variables.

The survey method using a researcher-made questionnaire was used in this study. According to John W. Creswell (2014) and Earl R. Babbie(2016), survey research enables the efficient collection of standardized data from a defined population, making it suitable for analyzing trends, attitudes and relationship among variables. The researcher-made questionnaire was developed based on the study objectives and subjected to validation to ensure reliability and relevance.

Respondents of the Study

The respondents of the study were the protected area occupants of Pan-ay River Watershed Forest Reserve (PRWFR) with one (1) respondent selected per household. These respondents were drawn from nine (9) barangays of the Municipality of Tapaz, namely: Abangay, Acuña, Aglinab, Daan Norte, Daan Sur, Lahug, Nayawan, Roxas and Tacayan.

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Based on the result of the Socio-economic Assessment and Monitoring System (SEAMS) conducted in 2017, a total of 187 households were identified within the PRWFR. To determine the sample size of 100 respondents, proportional allocation was employed. Specifically, the number of households in each barangay was divided by the total number of households (187) to compute the corresponding percentage share. This percentage was then used to determine the number of respondents to be selected from each barangay ensuring that the sample accurately reflects the distribution of households across the study area.

Sampling Design

This study employed a purposive sampling design to select respondents who are current occupants of the Pan-ay River Watershed Forest Reserve and engaged in *kaingin*. This non-probability sampling method is appropriate because the research requires respondents with specific characteristics relevant to the study. Only households residing within the identified barangays within the Pan-ay River Watershed Forest Reserve were included ensuring that the sample accurately represents the protected area occupants targeted by the research.

Research Instrument

A structured survey questionnaire prepared by the researcher was used consisting of five parts i.e., Part I – Sociodemographic Profile of the Respondents; Part II- Existing Livelihood Activities; Part III- Alternative Livelihood Programs Introduced by the Government within PRWFR; Part IV-Perspectives on Alternative Livelihood Programs; Part V-Willingness to Shift from *Kaingin* to Alternative Livelihoods and Part VI- Challenges and Barriers.

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Validation of the Research Instrument

To maintain the study's integrity, the researcher underwent a rigorous validation process for the instrument. The initial draft was first reviewed by the research adviser for structural refinements, followed by a formal evaluation by a panel of subject-matter experts to ensure face and content validity. All feedback, including specific corrections and tactical recommendations, was integrated into the final version before proceeding to reliability testing.

Reliability of the Research Instrument

Reliability denotes the consistency and stability of a research instrument across repeated applications (Dudovskiy, 2019). Following the validation phase and the integration of expert feedback, the instrument's reliability was rigorously tested. A pilot study was administered to thirty (30) participants in Brgy. San Juan, Jamindan, Capiz; these individuals were specifically selected because they fell outside the study's primary sample set.

To evaluate the instrument's internal consistency, the researcher utilized Cronbach's Alpha. This metric assesses inter-item homogeneity, making it ideal for cross-sectional designs where a test is administered once (Forero, 2017). The formula treats all items as equivalent units to estimate the overall reliability of the scale.

According to Taber (2017), a Cronbach's Alpha coefficient of 0.7 or higher is the standard threshold for acceptable consistency.

The analysis yielded a reliability index of 0.922, categorized as "Excellent." This high score confirms that the questionnaire is a highly reliable tool for data collection.

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Data Gathering Procedure

Prior to data collection, the researcher secured formal approval of the research plan from the supervising professor. Subsequently, authorization was obtained from the Dean of the PHINMA-University of Iloilo Graduate School via a formal request that outlined the study's objectives and guaranteed the strict confidentiality of all participant data.

To ensure full administrative compliance, additional clearances were coordinated and secured from the following offices: DENR Regional Executive Director, PENR Officer of the Province of Capiz, Local Government Unit of Tapaz, Capiz.

Once all permissions were granted, the researcher personally facilitated the distribution of the survey instrument to the target respondents. Upon completion of the surveys, the gathered data was systematically tabulated, analyzed, and interpreted to address the research objectives.

Data Analysis

To provide a clearer summary of the characteristics of the data set, descriptive analysis was utilized. This approach is instrumental in organizing and synthesizing raw observations into a constructive format, allowing significant patterns to emerge that align with the study's objectives.

By employing descriptive statistics, the researcher was able to simplify and categorize the collection of responses from the target population. These quantitative measures were complemented by narrative explanations to provide a comprehensive interpretation of the gathered information.

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To interpret the respondents' obtained median score in their perspectives towards the alternative livelihood programs and their willingness to shift from *kaingin* to alternative livelihood, table to interpret the median as shown below:

Statistical Tools

In analyzing the data of this study, the researcher applied the frequency (f) count and percentage (%) for descriptive analysis. The frequency count and percentage were used to determine the number of respondents or items belonging to a certain category.

Frequency Count. The frequency (f) of a particular observation is the number of times the observation occurs in the data.

Percentage. Percentage is a measure based on the ratio of responses to the number of respondents. It is equal to the frequency of responses to a certain category divided by the total number of respondents multiplied by 100.

Median. The median is a robust statistical measure of central tendency representing the exact middle value in an ordered dataset. It is highly effective for skewed data or datasets with outliers, as it is less affected by extreme values. Median was used to determine the level of perspectives of the occupants of the PRWFR towards the alternative livelihood programs introduced by the government and their level of willingness to shift from *kaingin* to alternative livelihood options.

Chi-square test was used to determine the relationship between the level of perspectives of the occupants of the PRWFR towards the alternative livelihood programs

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introduced by the government and their level of willingness to shift from *kaingin* to alternative livelihood options.

RESULTS AND DISCUSSION

This study examined the livelihood conditions, perceptions, willingness to shift, and challenges faced by occupants of the Pan-ay River Watershed Forest Reserve (PRWFR) in transitioning from *kaingin* to alternative livelihood options. The findings revealed that the respondents are predominantly middle-aged, married and low income households with moderate educational attainment and long-term residency in the area. Farming remains the primary source of livelihood with 100% respondents practicing *kaingin* indicating its deep rooted role as a survival strategy.

Despite this, government interventions such as the Department of Labor and Employment (DOLE) *Kabuhayan* Program and the Department of Environment and Natural Resources (DENR) Enhanced National Greening Program (ENGP) have provided alternative livelihood opportunities. These programs, particularly agroforestry-based initiatives like bamboo and coffee production were positively received by the respondents.

The level of perception toward these programs was found to be high, suggesting that respondents recognize their profitability, cultural acceptability, environmental sustainability and the adequacy of government support. Similarly, the level of willingness to shift from *kaingin* to alternative livelihoods was also high, indicating openness to change especially when supported by viable economic opportunities and institutional assistance.

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Furthermore, a significant relationship was established between perception and willingness to shift, confirming that positive perceptions directly influence behavioral change. However, despite high willingness to shift, confirming that positive perceptions directly influence behavioral change. However, despite high willingness, *kaingin* remains widely practiced due to persistent barriers such as limited market access, financial risk aversion, inadequate infrastructure, lack of technical knowledge and socio-cultural attachment to traditional practices.

Conclusions

Based on the findings, it can be concluded that while occupants of the Pan-ay River Watershed Forest Reserve (PRWFR) demonstrate a high level of willingness and positive perception toward alternative livelihood programs, the continued practice of *kaingin* is primarily driven by economic necessity and structural limitations. The study confirms that willingness alone is insufficient to drive behavioral change unless supported by sustained economic, technical and institutional interventions.

The strong relationship between perception and willingness emphasized the importance of awareness, education and demonstration of successful livelihood models in influencing adoption. Moreover, programs that provide tangible, asset-based support such as land and capital for production are more effective than purely financial assistance.

However, gaps in market access, infrastructure and long-term support limit the full adoption of alternative livelihoods. Therefore, a more integrated and holistic approach is necessary to ensure the successful transition from *kaingin* to sustainable livelihood systems.

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Recommendations

Based on the findings, this study recommends that government agencies, local government units, and protected area management bodies adopt a more comprehensive and inclusive approach to livelihood development within the Pan-ay River Watershed Forest Reserve (PRWFR).

The Department of Environment and Natural Resources (DENR), in coordination with the Department of Agriculture (DA) and the Local Government Unit of Tapaz, Capiz, should strengthen the implementation of alternative livelihood programs. This can be achieved by ensuring the provision of adequate financial assistance, continuous technical support, and capacity-building activities for upland communities. Enhancing program sustainability through regular monitoring and evaluation mechanisms is also essential.

Infrastructure development, particularly the completion and maintenance of farm-to-market roads, should be prioritized to improve accessibility and facilitate the transport and marketing of agricultural products. This will encourage greater participation among community members and increase the economic viability of alternative livelihoods.

There is also a need to establish market linkages and value chain support systems to ensure that products derived from alternative livelihood activities remain competitive and profitable. Strengthening partnerships with the private sector, cooperatives, and non-government organizations can further enhance income opportunities for beneficiaries.

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Capacity-building initiatives, such as training in sustainable agriculture, agroforestry, entrepreneurship, and financial management, should be intensified to equip community members with the skills necessary to sustain their livelihood activities independently.

Furthermore, policies and programs should promote inclusive community participation, ensuring that local stakeholders are actively involved in the planning, implementation, and evaluation processes. This participatory approach will foster a sense of ownership and accountability among beneficiaries.

Finally, future researchers are encouraged to conduct further studies to validate and expand upon these findings. Exploring additional variables, such as cultural practices, policy implementation gaps, and institutional dynamics, will contribute to a more comprehensive understanding of the factors influencing the adoption of alternative livelihoods.

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