

Level of Women Participation in Upland Farming

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DOI: <https://doi.org/10.47772/IJRISS.2026.100500625>

Received: 24 May 2026; Accepted: 29 May 2026; Published: 09 June 2026

ABSTRACT

Agriculture constitutes the backbone of most developing countries. In the Philippines, over 40% of the population depends on agriculture as their source of livelihood. This paper aims to determine the level of women's participation in upland farming in the Province of Nueva Vizcaya, Philippines. The study employed the descriptive survey method and made use of the purposive sampling technique. The study revealed that women in the Province of Nueva Vizcaya moderately participate in upland farming. Among all farming activities, women were found to be more involved in the marketing of farm products than in other farming activities. Women were also moderately involved in planning. Among the planning activities, women were most involved in investment and least involved in planting and harvesting. They were likewise moderately involved in production activities. Among these activities, they were most involved in weeding and least involved in spraying and fertilizer application. In harvesting and post-harvesting activities, women were moderately involved; they participated more in cleaning and least in hauling. It is prudent to say that women play a significant role in upland farming in the province. Therefore, policymakers and stakeholders should recognize this contribution and provide women with machines, tools, and equipment to make their work more effective and efficient.

Keywords: upland farming, women participation, rural agriculture, agricultural growth, agriculture production.

INTRODUCTION AND REVIEW OF RELATED LITERATURE

Agriculture remains one of the primary drivers of economic growth in many developing countries. In the Philippines, the agricultural sector continues to contribute significantly to employment and food security, providing livelihood opportunities to millions of Filipinos, particularly in rural communities (Philippine Statistics Authority [PSA], 2022). Agriculture likewise plays a crucial role in poverty reduction, rural development, and national economic stability, especially amid global challenges such as climate change and food insecurity (Food and Agriculture Organization [FAO], 2021). Moreover, the achievement of the Sustainable Development Goals (SDGs) recognizes agricultural development as essential in promoting sustainable economic growth, food security, and improved living conditions among rural populations (United Nations, 2015).

The growth and sustainability of the agricultural sector largely depend on the availability of labor, technology, and agricultural inputs. In many developing countries, agriculture remains a major source of employment and income generation (World Bank, 2021). Labor utilization in rural farming communities is influenced by several factors, including climate conditions, irrigation systems, cropping patterns, mechanization, landholding size, and access to agricultural technologies (FAO, 2021). Recent literature has increasingly emphasized the contribution of women to agriculture and rural development. Women play critical roles in food production, farm management, and household food security despite having limited access to productive resources, training, and decision-making opportunities (FAO, 2023; UN Women, 2021). Furthermore, previous studies have highlighted the increasing participation of women in agricultural labor and the need for gender-inclusive agricultural policies and programs (Doss et al., 2018; Quisumbing et al., 2014).

Women farmers in the Philippines are predominantly found in rural and upland areas where agriculture serves as a primary source of livelihood. Although women are often underrepresented in farm management and agricultural decision-making, they actively participate in planting, cultivation, harvesting, and post-harvest activities (PSA, 2021). Studies in Southeast Asia have shown that women significantly contribute to agricultural productivity and rural household welfare; however, their contributions remain undervalued and inadequately

recognized in many farming systems (Asian Development Bank [ADB], 2015).

Despite increasing recognition of women's contributions to agriculture, limited studies in the Philippines specifically examine women's participation in upland farming activities. Existing literature frequently focuses on lowland agricultural systems, leaving gaps in understanding the experiences, responsibilities, and challenges encountered by upland women farmers (Department of Agriculture, 2021). Hence, this study was conducted to address this research gap and provide updated information regarding women's participation in upland farming communities.

This study investigated the extent of women's participation in upland farming activities. The findings may serve as baseline information for developing inclusive agricultural programs and management strategies that support upland women farmers in addressing agricultural challenges. Moreover, the study seeks to support women farmers in transitioning from subsistence farming toward more sustainable and market-oriented agricultural practices, which are essential for improving household income and rural economic development (FAO, 2021). Through active participation in agriculture, women can significantly contribute to community development, food security, and economic sustainability.

One of the major contributions of this study is its addition to the growing body of literature concerning women's participation in agriculture and integrated rural development in Nueva Vizcaya. The data gathered may provide relevant and updated information regarding the actual roles and participation of women farmers in various upland farming communities in the province. Specifically, the study examined women's participation in upland farming management in terms of: (1) planning, (2) production, (3) harvesting and post-harvesting, and (4) marketing. Ultimately, the study intends to provide recommendations that may further strengthen and improve women's participation in upland farming activities.

METHODOLOGY

This study utilized the descriptive survey method to determine the extent of women's participation in upland farming activities in the Province of Nueva Vizcaya, Philippines. The descriptive survey design was considered appropriate because it allowed the researchers to gather quantitative data regarding the roles and level of participation of women farmers in various upland farming activities.

The study was conducted in six upland municipalities of Nueva Vizcaya, namely: (1) Ambaguio, (2) Kayapa, (3) Sta. Fe, (4) Kasibu, (5) Dupax del Norte, and (6) Dupax del Sur. These municipalities were selected because upland farming serves as one of the primary sources of livelihood among rural households in these areas.

The study employed a purposive sampling technique in selecting the respondents. The respondents were chosen based on the following criteria: (a) the upland farms managed by the women farmers were owned, rented, or leased; (b) the female farmers had living spouses who also participated in upland farming activities; and (c) the female farmers were actively involved in upland farming operations. A total of 115 women upland farmers participated in the study.

An adapted and modified questionnaire served as the primary data-gathering instrument. The questionnaire was designed to obtain information regarding the respondents' level of participation in upland farming management activities, particularly in terms of planning, production, harvesting and post-harvesting, and marketing. Prior to data collection, the questionnaire was reviewed and modified to ensure its suitability to the local context of the study.

The data gathered were analyzed using appropriate descriptive statistical tools, including frequency counts, percentages, mean, and standard deviation. Frequencies and percentages were used to describe the profile of the respondents, while the mean and standard deviation were utilized to determine the extent and variability of women's participation in upland farming activities.

RESULTS AND DISCUSSION

Extent on Level of Participation of Women in Upland Farming

This section presents and discusses the extent of women’s participation in upland farming activities in the Province of Nueva Vizcaya. Specifically, it examines the level of women’s involvement in the major areas of upland farm management, namely: planning, production, harvesting and post-harvesting, and marketing. The discussion highlights the roles performed by women farmers and analyzes the degree of their participation in various farming activities.

Planning

The extent of women farmers’ participation in farming activities in terms of planning is presented in Table 1. The findings revealed an overall weighted mean of 2.94, interpreted as a moderate level of participation. This indicates that women farmers are involved in planning-related activities to a certain extent, although their participation is not yet highly pronounced in all aspects of farm management. The result suggests that women contribute to important farming decisions but may still encounter limitations in exercising full authority and control over agricultural planning processes, particularly in traditionally male-dominated agricultural settings (Food and Agriculture Organization [FAO], 2023; Doss et al., 2018).

Among the planning activities, investment obtained the highest mean score (3.45), indicating that women are relatively more engaged in decisions related to financial allocation and farm expenditures. This finding may imply that women farmers play a significant role in managing household and farm finances, particularly in determining how limited agricultural resources are utilized. Their active participation in investment decisions reflects their practical involvement in sustaining farm operations and ensuring the economic survival of rural households (Quisumbing et al., 2014).

On the other hand, planting days and harvesting days registered the lowest mean scores (2.73). This suggests that women have less participation in scheduling major farm operations, which may still be influenced by male household members or traditional farming practices within the community. Labor-intensive tasks and strategic production decisions are frequently shaped by gendered divisions of labor in rural agricultural systems, where men often assume greater control over production scheduling and farm management (FAO, 2011; UN Women, 2021). The relatively lower participation of women in these areas indicates the persistence of gender-based roles in farm decision-making.

The moderate participation of women in planning activities may also be associated with limited access to agricultural training, extension services, and leadership opportunities. Although women actively participate in farm labor and household management, they are not always included in formal decision-making processes regarding crop selection, labor allocation, and production scheduling. Limited access to productive resources, agricultural knowledge, and extension programs may reduce women’s capacity to maximize their contributions to agricultural productivity and farm efficiency (FAO, 2023; World Bank, 2021).

The findings highlight the need for more gender-responsive agricultural programs that encourage women’s involvement not only in farm labor but also in farm planning and management. Agricultural institutions, local government units, and development organizations may strengthen women’s participation by providing capacity-building programs on farm planning, financial management, leadership, and decision-making. Improving women’s access to agricultural credit, technical assistance, and farmer organizations may further enhance their confidence and influence in agricultural planning activities. Strengthening women’s role in farm decision-making can contribute to more inclusive agricultural development and improved household welfare in upland farming communities (FAO, 2023; Asian Development Bank [ADB], 2015).

Table 1. Extent on Level of Participation of Women-Farmers in Planning

Items	Mean	Interpretation
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1. Capital Requirement	2.90	Moderate Level of Participation
2. Sourcing of Capital	2.98	Moderate Level of Participation
3. Budgeting	3.08	Moderate Level of Participation
4. Crops to be Planted	2.83	Moderate Level of Participation
5. Labor Requirement	2.81	Moderate Level of Participation
6. Planting Days	2.73	Moderate Level of Participation
7. Harvesting Days	2.73	Moderate Level of Participation
8. Marketing Techniques	2.97	Moderate Level of Participation
9. Investment	3.45	Moderate Level of Participation
Overall Weighted Mean	2.94	Moderate Level of Participation

Production

Table 2 presents the extent of women farmers' participation in production activities. The findings revealed an overall weighted mean of 2.66, interpreted as a moderate level of participation. This result indicates that women farmers are involved in production-related activities to a moderate extent and regularly contribute to the daily operations of upland farming systems. However, their participation remains limited in certain aspects of farm production, suggesting unequal access to productive resources and decision-making opportunities within farming households (Food and Agriculture Organization [FAO], 2023; Doss et al., 2018).

The findings imply that women in upland farming communities primarily perform supportive and labor-intensive functions necessary for maintaining crop productivity and sustaining farm operations. Their moderate participation reflects the continuing influence of traditional gender roles, wherein women are actively engaged in farm labor but are less involved in production management and strategic agricultural decisions. Although women contribute substantially to agricultural productivity, their roles are often concentrated in routine production tasks rather than in activities requiring greater control over farm resources and production planning (FAO, 2011; Quisumbing et al., 2014).

The moderate level of participation may also be associated with structural and socioeconomic constraints experienced by women farmers. Limited access to agricultural technologies, farm inputs, financial resources, and extension services may reduce women's ability to participate more actively in production activities (World Bank, 2021; FAO, 2023). In addition, women in rural communities commonly perform multiple responsibilities related to household management, childcare, and domestic work alongside agricultural labor. These overlapping responsibilities may limit women's time and capacity to engage fully in physically demanding and time-intensive farming operations (UN Women, 2021).

The findings further suggest that women's participation in agricultural production remains highly dependent on the availability of institutional and community support systems. Limited gender-responsive agricultural programs and the underrepresentation of women in farmer organizations may contribute to reduced participation in production-related decision-making and farm management activities. This condition highlights the need for agricultural interventions that recognize women not only as labor contributors but also as key stakeholders in agricultural development (Asian Development Bank [ADB], 2015; FAO, 2023).

The results underscore the importance of strengthening women-centered agricultural support services in upland farming communities. Agricultural agencies and local government units may enhance women's participation through capacity-building programs on sustainable crop production, farm management, and appropriate agricultural technologies. Expanding women's access to agricultural credit, farm inputs, training opportunities, and mechanized farming tools may further improve productivity and efficiency in farm operations (World Bank, 2021; FAO, 2021).

Moreover, promoting women's participation in farmer organizations, cooperatives, and leadership activities may enhance their confidence and involvement in agricultural decision-making processes. Policies and development programs that support gender inclusivity in agriculture can contribute to improved farm productivity, household welfare, and sustainable rural development. Strengthening the role of women in agricultural production is therefore essential in achieving more equitable and resilient upland farming systems (FAO, 2023; ADB, 2015).

Table 2. Extent on level of Participation of Women Farmers in Production

Activities	Mean	Interpretation
1. Land Preparation	2.60	Moderate Level of Participation
2. Planting	3.05	Moderate Level of Participation
3. Watering	2.53	Moderate Level of Participation
4. Applying Fertilizer	2.46	Low Level of Participation
5. Spraying	2.01	Low Level of Participation
6. Weeding	3.33	Moderate Level of Participation
Overall Weighted Mean	2.66	Moderate Level of Participation

Harvesting and Post-Harvesting

Table 3 presents the extent of women farmers' participation in harvesting and post-harvesting activities. The findings revealed an overall weighted mean of 3.06, interpreted as a moderate level of participation. Compared with planning and production activities, women demonstrated relatively greater involvement in harvesting and post-harvesting operations. This finding indicates that women occupy an important functional role in activities associated with crop handling, product preparation, and preservation of produce quality within upland farming systems (Food and Agriculture Organization [FAO], 2023).

The higher level of participation observed in harvesting and post-harvesting activities suggests that women's labor is concentrated in tasks closely linked to household food management and income generation. In many upland farming communities, post-harvest operations are commonly integrated with domestic responsibilities, making women more directly engaged in activities such as cleaning, sorting, grading, drying, and storage preparation. Their participation in these activities reflects the gendered division of labor commonly observed in rural agricultural households, where women frequently assume responsibilities associated with food handling and product preparation (FAO, 2011; UN Women, 2021).

The results further indicate that women were more actively involved in cleaning, sorting, and grading activities than in other post-harvest operations. This pattern of participation highlights women's contribution to maintaining product quality and improving the marketability of agricultural produce. These activities are essential components of the agricultural value chain because they directly influence product appearance, storage quality, and market acceptance. The findings imply that women's labor contributes not only to farm productivity but also to the economic value of agricultural outputs in upland farming communities (Quisumbing et al., 2014; Doss et al., 2018).

Despite their active involvement, the overall moderate level of participation suggests the existence of structural and operational constraints affecting women's engagement in post-harvest management. Limited access to post-harvest technologies, transportation facilities, storage infrastructure, and processing equipment may restrict women's productivity and increase dependence on labor-intensive practices. In many rural upland communities, inadequate institutional support and limited technical training continue to constrain women's capacity to adopt improved post-harvest methods and value-adding activities (World Bank, 2021; FAO, 2021).

The findings emphasize the need for gender-responsive agricultural interventions that strengthen women's

participation in post-harvest management and rural enterprise development. Agricultural agencies and local government units may enhance women's productivity by providing technical assistance, skills training, and access to appropriate post-harvest technologies. Support services focusing on food processing, packaging, storage management, and value addition may help women farmers improve product quality, reduce post-harvest losses, and increase farm profitability (Asian Development Bank [ADB], 2015; FAO, 2023).

Furthermore, strengthening women's access to farmer cooperatives, microfinance programs, and rural marketing networks may improve their economic participation and decision-making capacity within agricultural communities. Development initiatives that recognize women as active contributors to agricultural value chains can contribute to increased household income, improved food security, and more sustainable upland agricultural systems (FAO, 2023; World Bank, 2021).

Table 3: Extent on Level of Participation of Women farmers in Harvesting and Post-harvesting

Activities	Mean	Interpretation
1. Harvesting	3.16	Moderate Level of Participation
2. Hauling	2.18	Low Level of Participation
3. Cleaning	3.18	Moderate Level of Participation
4. Sorting and Grading	3.25	Moderate Level of Participation
5. Packing	2.95	Moderate Level of Participation
6. Transporting	2.87	Moderate Level of Participation
Overall Weighted Mean	3.06	Moderate Level of Participation

Marketing

Table 4 presents the extent of women's participation in marketing activities. The findings revealed an overall weighted mean of 3.42, interpreted as a moderate level of participation. Among the four major dimensions of upland farming examined in the study, marketing obtained the highest mean score, indicating that women are more actively engaged in marketing-related activities than in planning, production, and harvesting/post-harvesting operations. This finding highlights the substantial role of women in the economic and commercial aspects of upland farming systems (Food and Agriculture Organization [FAO], 2023).

The relatively higher level of participation in marketing activities suggests that women play an important role in the management and allocation of household and farm income. In many upland farming households, women are directly involved in selling agricultural produce, negotiating prices, managing financial transactions, and allocating earnings for household expenditures. Their active participation in marketing reflects their contribution not only to farm income generation but also to household economic stability and resource management (Quisumbing et al., 2014; Doss et al., 2018).

The findings further indicate that marketing activities may provide women with greater opportunities for participation compared with other farming operations that are more physically demanding or traditionally male-dominated. Marketing-related functions often involve communication, negotiation, budgeting, and customer interaction, areas in which women have developed practical experience through both household and community responsibilities. As a result, women's participation becomes more visible in activities associated with product distribution and market engagement (UN Women, 2021; Asian Development Bank [ADB], 2015).

Although women demonstrated the highest participation in marketing activities, the overall result remained within the moderate category, indicating that several barriers continue to limit their full economic participation. Limited access to transportation, market infrastructure, financial capital, market information, and value-adding technologies may restrict women's ability to expand their marketing activities and improve profitability.

Geographic isolation and inadequate institutional support in upland communities may further constrain women's access to wider market networks and commercial opportunities (World Bank, 2021; FAO, 2021).

The findings underscore the importance of strengthening gender-responsive agricultural marketing programs and support services for women farmers. Capacity-building initiatives focusing on entrepreneurship, financial management, product development, and agribusiness skills may enhance women's competence and participation in agricultural marketing. Improved access to credit facilities, market information systems, transportation support, and digital marketing platforms may also increase women's market competitiveness and economic productivity (FAO, 2023; ADB, 2015).

Furthermore, strengthening women's participation in farmer cooperatives, rural enterprises, and community-based organizations may improve their bargaining power, market access, and involvement in agricultural decision-making processes. Support for value-adding activities such as food processing, packaging, and product diversification may further enhance women's income-generating opportunities and economic empowerment. Enhancing women's participation in agricultural marketing therefore contributes not only to household welfare but also to inclusive rural development and the sustainability of upland farming communities (FAO, 2023; World Bank, 2021).

Table 4: Extent on Level of Participation of Women Farmers in Marketing

Activities	Mean	Interpretation
Canvassing	3.14	Moderate Level of Participation
Selling	3.15	Moderate Level of Participation
Receiving of Sales	3.97	High Level of Participation
Overall Weighted Mean	3.42	Moderate Level of Participation

SUMMARY OF RESULTS

Table 5 presents the summary of findings on the extent of women's participation in upland farming activities. The results revealed an overall weighted mean of 3.06, interpreted as a moderate level of participation. This finding indicates that women farmers are actively engaged in various upland farming activities, although their participation remains moderate across the different dimensions of farm management and agricultural operations. The results further suggest that women perform substantial productive and economic roles within upland farming households while still facing constraints that limit their full participation in agricultural decision-making and resource management.

Among the four dimensions examined, marketing obtained the highest weighted mean score (3.42), followed by harvesting and post-harvesting (3.06), planning (2.94), and production (2.66). The relatively higher participation in marketing and post-harvesting activities indicates that women's involvement is concentrated in functions associated with household income management, product handling, and market-related activities. These findings imply that women occupy important positions within the agricultural value chain, particularly in activities that directly contribute to household economic stability and food security.

Conversely, the comparatively lower participation in planning and production activities reflects the continuing influence of structural and gender-based limitations in upland farming communities. Limited access to agricultural technologies, productive resources, extension services, and formal decision-making opportunities may reduce women's participation in farm planning and production management. The findings suggest that women remain more involved in operational and support-related functions rather than in strategic agricultural decision-making processes.

The moderate level of participation across all farming dimensions may also be attributed to the multiple roles performed by women in rural households. In addition to agricultural labor, women are commonly responsible

for household management, childcare, and other domestic responsibilities, which may constrain their time and capacity for more extensive participation in farming activities. Despite these limitations, women continue to contribute significantly to upland farming systems and rural household sustainability.

The findings underscore the need for strengthened gender-responsive agricultural policies and support services that promote women's empowerment in upland farming communities. Agricultural institutions and local government units may enhance women's participation through capacity-building programs focusing on farm management, agricultural entrepreneurship, leadership development, and technical agricultural skills. Improving women's access to agricultural credit, extension services, farm inputs, mechanized technologies, and market information systems may further strengthen their productivity and participation in agricultural activities.

Furthermore, increasing women's involvement in farmer cooperatives, rural organizations, and community-based agricultural programs may improve their access to resources, institutional support, and economic opportunities. Development interventions that recognize women as active agricultural stakeholders are essential in promoting gender equity, improving agricultural productivity, and achieving sustainable rural development. Overall, the study highlights the critical contribution of women to upland farming and emphasizes the importance of institutional support mechanisms that can further strengthen their participation in agricultural development.

Table 5: Summary of results on the extent on level of participation of upland women.

Activities	Mean	Interpretation
1. Planning	2.94	Moderate Level of Participation
2. Production	2.66	Moderate Level of Participation
3. Harvesting and postharvesting	3.06	Moderate Level of Participation
4. Marketing	3.42	Moderate Level of Participation
Overall Weighted Mean	3.06	Moderate Level of Participation

CONCLUSIONS

The study concluded that women in the upland farming communities of Nueva Vizcaya moderately participate in major farming activities, including planning, production, harvesting and post-harvesting, and marketing. Their involvement demonstrates the significant role they play in sustaining agricultural production and supporting household welfare in rural communities.

Among the farming activities, marketing recorded the highest level of participation, indicating that women are more actively engaged in the selling and distribution of agricultural products and in managing household income. Women also showed moderate participation in planning activities, particularly in investment-related decisions, although their involvement in planting and harvesting schedules remained limited.

In production activities, women were most involved in weeding but had lower participation in spraying and fertilizer application, suggesting the influence of labor demands and access to farm resources. Similarly, women moderately participated in harvesting and post-harvesting activities, with greater involvement in cleaning agricultural produce and less participation in hauling tasks.

Therefore, the findings highlight the important contribution of women to upland farming while underscoring the need for gender-responsive agricultural support services, capacity-building programs, and greater inclusion of women in farm decision-making and agricultural development initiatives.

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