

Socio-Economic Characteristics of Residents in Selected Barangays of Nueva Valencia, Guimaras: Implications for Igang Sub-Watershed Management Planning

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ABSTRACT Understanding the socio-economic characteristics of communities within watershed areas is essential for designing effective and sustainable watershed management strategies. This study assessed the socio-economic profile of residents in selected barangays surrounding the Igang Sub-Watershed in Nueva Valencia, Guimaras, as a basis for informing watershed management planning. Specifically, the study examined the respondents' profile in terms of years of residence, sex, age, religion, occupation, monthly income, and sources of income. A descriptive research design employing a quantitative approach was used in the study. Data were collected through a researcher-made questionnaire administered through one-on-one interviews with 400 household respondents from the barangays of Sto. Domingo, Lanipe, Concordia Sur, Salvacion, and Igang. Frequency counts and percentage distributions were used to analyze the data. Results revealed that a significant proportion of respondents have lived in their communities for more than 41 years, indicating strong community attachment and substantial local knowledge of environmental conditions. The majority of respondents were female and belonged to the economically productive age groups. Roman Catholicism and Iglesia Filipina Independiente were the dominant religious affiliations among residents. In terms of occupation, most respondents were laborers, housewives, and small-scale entrepreneurs, while others were engaged in farming, fishing, and government-related work. The income profile showed that most households earned ₱10,000 and below per month, indicating that many residents belong to the low-income sector and rely on informal and resource-based livelihood activities. The findings highlight the economic vulnerability of households and their dependence on natural resources within the watershed area. These results emphasize the importance of integrating socio-economic considerations into watershed management planning. Strengthening livelihood development, community participation, and environmental awareness programs is essential to support sustainable watershed management and improve the well-being of communities within the Igang Sub-Watershed.

Keywords: sanitation, religious affiliations, age groups, occupations, home lots, water source, waste disposal

INTRODUCTION

Watershed management has long recognized the importance of integrating socio-economic considerations into environmental planning and resource governance. Early watershed initiatives focused primarily on biophysical assessments such as hydrology, land use, and soil characteristics; however, subsequent research demonstrated that human dimensions significantly influence watershed sustainability and conservation outcomes. Socio-economic characteristics—including population structure, education, livelihood systems, and household dynamics—shape how communities interact with watershed resources and respond to environmental interventions. Consequently, baseline socio-economic profiling has become a fundamental component of watershed planning frameworks aimed at balancing ecological protection with community development (Endayani et al., 2019; Nerkar et al., 2013).

In recent years, socio-economic assessments have gained increasing importance in integrated watershed management, particularly in rural and coastal landscapes where livelihoods are closely linked to natural resources. Studies consistently demonstrate that income sources, educational attainment, and household composition influence participation in watershed programs and the adoption of conservation practices (Jariyah & Pramono, 2018; Sulaksono et al., 2021; Manojlović et al., 2022). In the Philippine context, socio-economic profiling has been shown to inform more inclusive and context-sensitive watershed interventions, ensuring that conservation strategies align with local livelihood realities (Balanay et al., 2025). For areas such as the Igang Sub-Watershed in Nueva Valencia, Guimaras, understanding the socio-economic structure of communities provides critical insights for designing participatory and sustainable watershed management strategies (Vergara et al., 2024).

Despite the growing recognition of socio-economic factors in watershed governance, many watershed management initiatives remain heavily focused on biophysical indicators while overlooking community-level social and economic dynamics. This limitation often leads to interventions that are technically sound but socially misaligned, reducing community participation and long-term sustainability. In addition, limited localized socio-economic data within sub-watersheds can hinder planners from identifying priority areas, assessing vulnerability, and tailoring development interventions. The absence of integrated socio-economic baselines therefore represents a significant gap in evidence-based watershed planning, particularly at the sub-watershed level.

Addressing these gaps requires integrating comprehensive socio-economic profiling into watershed management planning and decision-making processes. Combining household surveys, participatory approaches, and spatial analysis can generate robust socio-economic baselines that complement biophysical watershed assessments. Such integrated approaches enable planners to identify vulnerable communities, align conservation actions with livelihood needs, and promote equitable participation in watershed initiatives. For the Igang Sub-Watershed, incorporating socio-economic indicators into management planning can support more targeted, inclusive, and sustainable watershed interventions that benefit both ecosystems and local communities.

Objectives:

This study was conducted to determine the socio-economic characteristics of residents in selected barangays of Nueva Valencia, Guimaras. Specifically, it sought to provide information on the following concerns:

1. Determine the profile of the respondents indicated as to years living in residence, sex, age, religion, occupation, monthly income, and sources of income.

METHODOLOGY

Respondents of the study were the household members residing in Nueva Valencia, particularly in the five (5) identified barangays surrounding the Igang sub-watershed, namely: Sto. Domingo, Lanipe, Concordia Sur, Salvacion, and Igang.

Purposive random sampling was used in selecting the sample respondents since they were pre-identified by the local officials as community members living in the surrounding watershed.

A descriptive research design was used, employing the quantitative method in the analysis of data using frequency counts and percentages. A researcher-made questionnaire was used as a data-gathering tool. The one-on-one interview was conducted to ensure the accuracy of the answers given by the interviewees. Moreover, addressing the sensitivity of some questions and the need for clear, sharp, and explicit answers to some questions compel the need for a personal interview approach.

RESULTS AND DISCUSSION

Profile of the respondents

Number of years of stay

Table 1 presents the distribution of respondents according to the number of years they have lived in their respective barangays within the Igang Sub-Watershed area of Nueva Valencia, Guimaras. The results show that the largest proportion of respondents have lived in their communities for 41 years and above, accounting for 145 respondents (36.25%). This indicates that many residents have long-standing ties to their communities, suggesting a stable population with substantial local knowledge of environmental conditions and watershed-related changes.

Among the barangays, Salvacion recorded the highest number of long-term residents with 49 respondents (12.25%), followed by Lanipe with 42 respondents (10.50%) and Igang with 29 respondents (7.25%) who have lived in the area for more than 41 years. These findings suggest that these communities possess strong social roots and accumulated experiences related to land use, livelihood activities, and local environmental conditions that are important in watershed management planning.

On the other hand, respondents who have lived in the area for below 10 years comprised 63 individuals (15.75%), indicating the presence of relatively newer residents in the watershed communities. The mix of long-term and newer residents highlights the need for inclusive watershed planning strategies that incorporate local knowledge while strengthening awareness and participation among newer community members in conservation and watershed management initiatives.

Research indicates that residents' perceptions and attitudes toward watershed management are shaped by their duration of residence. For instance, studies have shown that individuals who have lived longer in a watershed tend to have a stronger sense of responsibility toward environmental stewardship and are more likely to participate in conservation efforts (Narendra et al., 2021). This is particularly important in the context of community-based watershed management, where local involvement is essential for the success of initiatives aimed at improving water quality and ecosystem health (Nugroho et al., 2023).

Table 1. Profile of the Respondents as to years living in residence.

Barangay	Number of Years living in residence	Frequency	Percent
Sto. Domingo	Below 10 years	5	1.25
	11-20 years	6	1.50
	21-30 years	4	1.00
	31-40 years	3	0.75
	41- Above	17	4.25
Lanipe	Below 10 years	23	5.75
	11-20 years	23	5.75
	21-30 years	16	4.00
	31-40 years	24	6.00
	41- Above	42	10.50
Concordia Sur	Below 10 years	4	1.00
	11-20 years	4	1.00
	21-30 years	1	0.25
	31-40 years	6	1.50
	41- Above	8	2.00
Salvacion	Below 10 years	18	4.50
	11-20 years	20	5.00
	21-30 years	20	5.00
	31-40 years	20	5.00
	41- Above	49	12.25
Igang	Below 10 years	13	3.25
	11-20 years	12	3.00
	21-30 years	15	3.75
	31-40 years	18	4.50
	41- Above	29	7.25
Total		400	100.0

Gender Distribution

Table 2 presents the distribution of respondents according to sex across the selected barangays in Nueva Valencia, Guimaras. The results indicate that female respondents constitute the majority of the sample, with 284 individuals (71.0%), while male respondents account for 116 individuals (29.0%) out of the total 400 respondents. This suggests that women were more available or more actively involved during the household survey process, which is common in community-based socio-economic studies where women often represent households during interviews.

Across the barangays, the highest number of female respondents was recorded in Lanipe and Salvacion, each with 93 respondents (23.25%), followed by Igang with 58 respondents (14.50%), Sto. Domingo with 27 respondents (6.75%), and Concordia Sur with 13 respondents (3.25%). In contrast, male respondents were fewer in all barangays, with Lanipe (35 or 8.75%) and Salvacion (34 or 8.50%) having the highest male representation, followed by Igang (29 or 7.25%), Concordia Sur (10 or 2.50%), and Sto. Domingo (8 or 2.00%).

The predominance of female respondents suggests that women play a significant role in household management and community participation within the watershed area. From a watershed management perspective, this finding highlights the importance of incorporating gender-responsive approaches in planning and implementing conservation programs, as women may serve as key stakeholders in environmental stewardship, household decision-making, and community-based watershed initiatives.

The participatory integrated watershed management approach, as discussed by Agidew and Singh, emphasizes the importance of community involvement, which includes both men and women, to achieve broader natural resource management and livelihood improvement objectives (Agidew & Singh, 2018). This approach not only enhances the productivity of water and land resources but also fosters a sense of ownership among community members, leading to more sustainable practices.

Table 2. Profile of the Respondents as to sex.

Barangay	Sex	Frequency	Percent
Sto. Domingo	Male	8	2.00
	Female	27	6.75
Lanipe	Male	35	8.75
	Female	93	23.25
Concordia Sur	Male	10	2.50
	Female	13	3.25
Salvacion	Male	34	8.50
	Female	93	23.25
Igang	Male	29	7.25
	Female	58	14.50
Total		400	100.0

Age Distribution

Table 3 presents the age distribution of respondents from the selected barangays in Nueva Valencia, Guimaras. The results show that the 46–58 years old age group constitutes the largest proportion of respondents, with 114 individuals (28.5%), followed by those aged 32–45 years old with 116 respondents (29.0%). This indicates that most respondents belong to the economically productive and mature working-age population, suggesting that they are actively involved in livelihood activities and community decision-making related to watershed resources.

Across the barangays, Salvacion recorded the highest number of respondents aged 46–58 years old (42 or 10.5%), followed by Lanipe with 25 respondents (6.25%) and Igang with 24 respondents (6.0%) in the same age category. Meanwhile, the 32–45 years old group was particularly prominent in Lanipe (40 respondents or 10.0%) and Salvacion (35 respondents or 8.75%), reflecting a strong representation of middle-aged adults. These age groups are often key participants in local agricultural production, livelihood activities, and community development initiatives within watershed areas.

In contrast, the youngest age group (15–31 years old) accounted for 61 respondents (15.25%), while the oldest group (72 years and above) comprised 32 respondents (8.0%), indicating relatively smaller representations at both ends of the age spectrum. The presence of both younger and older residents suggests a diverse age structure within the watershed communities. For watershed management planning, this demographic composition highlights the importance of engaging productive-age adults in conservation activities while also incorporating the knowledge and experiences of older residents and encouraging youth participation in sustainable watershed stewardship.

Research indicates that older individuals, particularly those over 40 years of age, tend to have a heightened awareness of environmental issues and a greater perception of risks associated with watershed degradation. For instance, Zeng highlights that this demographic is more likely to recognize the recreational ecosystem services provided by watershed forests, which can influence their support for sustainable management practices (Zeng, 2023). This increased awareness can be leveraged by policymakers to tailor communication strategies that resonate with older populations, thereby enhancing their involvement in watershed management initiatives. The integration of age-related factors into watershed management is also supported by the findings of Sriyana, who discusses the necessity of considering various stakeholders' characteristics, including age, in the classification and prioritization of watershed management actions (Sriyana, 2019). This approach ensures that the management strategies are not only effective but also equitable, addressing the needs of all age groups involved.

Table 3. Profile of the Respondents as to age.

Barangay	Age	Frequency	Percent
Sto. Domingo	15-31 years old	5	1.25
	32-45 years old	8	2.00
	46-58 years old	11	2.75
	59-71 years old	6	1.50
	72-above	5	1.25
Lanipe	15-31 years old	17	4.25
	32-45 years old	40	10.00
	46-58 years old	25	6.25
	59-71 years old	24	6.00
	72-above	12	3.00
Concordia Sur	15-31 years old	7	1.75
	32-45 years old	8	2.0
	46-58 years old	12	3.0
	59-71 years old	2	0.5
	72-above	4	1.0
Salvacion	15-31 years old	18	4.5
	32-45 years old	35	8.75
	46-58 years old	42	10.5
	59-71 years old	26	6.5
	72-above	6	1.5
Igang	15-31 years old	14	3.5
	32-45 years old	25	6.25
	46-58 years old	24	6.0
	59-71 years old	19	4.75
	72-above	5	1.25
Total		400	100.0

Religion Distribution

Table 4 presents the religious affiliation of respondents across the selected barangays in Nueva Valencia, Guimaras. The results indicate that Roman Catholicism is the predominant religion, comprising 255 respondents (63.75%) of the total sample. This is followed by members of the Iglesia Filipina Independiente (IFI) with 116 respondents (29.0%), while Baptist and other religions represent smaller proportions of 8 respondents (2.0%) and 21 respondents (5.25%), respectively. The predominance of Roman Catholic and IFI affiliations reflects the common religious composition observed in many rural communities in the Philippines.

Across the barangays, Salvacion recorded the highest number of Roman Catholic respondents with 118 individuals (29.5%), followed by Lanipe with 75 respondents (18.75%) and Igang with 29 respondents (7.25%). Meanwhile, the Iglesia Filipina Independiente (IFI) showed a strong presence in Igang with 54 respondents (13.5%), as well as in Lanipe with 34 respondents (8.5%) and Sto. Domingo with 18 respondents (4.5%). Other religious affiliations such as Baptist and other denominations were observed in smaller numbers, mainly in Lanipe and Sto. Domingo.

The distribution of religious affiliations suggests a relatively homogeneous religious landscape dominated by major Christian denominations. From a community development and watershed management perspective, religious institutions can play an important role in mobilizing community participation, disseminating environmental awareness, and supporting collective conservation initiatives. Churches and faith-based organizations often serve as platforms for community gatherings and social engagement, which can be utilized to strengthen advocacy for sustainable watershed management and environmental stewardship.

Watersheds are recognized as integral to the cultural and spiritual well-being of communities. Flotemersch et al. emphasize that watersheds encompass all biotic and abiotic components, including human populations, and provide essential services that underpin social and spiritual life (Flotemersch et al., 2015). This notion is echoed in the integrated watershed management (IWM) framework, which acknowledges that effective management must consider the livelihoods and cultural practices of local populations (Lau, 2021). In the Visayas, religious beliefs often shape community interactions with natural resources, influencing how water is perceived and utilized. For instance, certain water bodies may be regarded as sacred, leading to community-led conservation efforts that align with both ecological sustainability and spiritual reverence.

Table 4. Profile of the Respondents as to religion.

Barangay	Religion	Frequency	Percent
Sto. Domingo	Roman Catholic	16	4.0
	Iglesia Filipina Indipendiente (IFI)	18	4.5
	Baptist	1	0.25
	Other Religions	1	0.25
Lanipe	Roman Catholic	75	18.75
	Iglesia Filipina Indipendiente (IFI)	34	8.5
	Baptist	3	0.75
	Other Religions	16	4.0
Concordia Sur	Roman Catholic	17	4.25
	Iglesia Filipina Indipendiente (IFI)	5	1.25

	Baptist	0	0
	Other Religions	0	0
Salvacion	Roman Catholic	118	29.5
	Iglesia Filipina Independiente (IFI)	5	1.25
	Baptist	0	0
	Other Religions	4	1.0
Igang	Roman Catholic	29	7.25
	Iglesia Filipina Independiente (IFI)	54	13.5
	Baptist	4	1.0
	Other Religions	0	0
Total		400	100.0

Occupation Distribution

Table 5 presents the occupational profile of respondents in the selected barangays of Nueva Valencia, Guimaras. The results reveal that the largest proportion of respondents are laborers, comprising 111 individuals (27.8%), followed by housewives with 84 respondents (21.0%) and entrepreneurs with 52 respondents (13.0%) engaged in activities such as fish vending, vegetable vending, sari-sari store operation, fishball vending, and mat weaving. These findings suggest that the local economy is largely characterized by informal and small-scale livelihood activities, which are typical of rural communities where income sources are often diversified and dependent on available local opportunities.

Agriculture and resource-based livelihoods also remain important in the study area. The data show that 40 respondents (10.0%) are farmers, including animal and hog raisers, while 12 respondents (3.0%) are fishermen, indicating continued reliance on agricultural and aquatic resources for income. In addition, 29 respondents (7.3%) are government employees, including barangay officials and community health workers, reflecting the presence of local governance and public service roles within the community. Smaller proportions of respondents are engaged in professional or specialized occupations such as teachers, seafarers, systems engineers, and nursing attendants.

Other respondents include students (3.0%), retirees (3.0%), senior citizens (2.5%), and unemployed individuals (1.3%), while a small number reported working abroad as Overseas Filipino Workers (0.5%). The diversity of occupations indicates a mixed livelihood structure, although the dominance of labor-based and informal work suggests relatively modest economic conditions in the watershed communities. From a watershed management perspective, understanding the occupational profile is essential in designing livelihood-sensitive conservation programs, as many households depend on natural resources and local economic activities that may directly interact with watershed ecosystems.

The socio-economic factors influencing watershed management in Guimaras cannot be overlooked. Rapid population growth and urbanization often exacerbate the pressures on watershed resources, leading to increased land degradation and erosion (Gebretsadik, 2013; Kieti et al., 2016). Effective management strategies must therefore incorporate community participation and stakeholder engagement to ensure that the needs and knowledge of residents are integrated into watershed planning and decision-making processes (Katusiime & Schütt, 2020). This participatory approach is essential for fostering a sense of ownership among community members, which can lead to more sustainable management outcomes.

Table 5. Profile of the Respondents as to occupation.

Occupation	Frequency	Percent
Broker	1	.3
Clerk	1	.3
Dog Breeder	1	.3
Driver	1	.3
Entrepreneur (Fish Vending, Vegetable Vending, Sari-sari Store Owner, Fishball Vending, Mat Weaver)	52	13.0
Enumerator	1	0.3
Farmer (Animal Raiser, Hog Raiser)	40	10.0
Fisherman	12	3.0
Government Employee (Brgy. Kagawad, Brgy. Health Worker, Treasurer, COS/Job hire government employee, Brgy. Tanod, Brgy. Nutrition Scholar)	29	7.3
Housewife	84	21.0
Laborer (Water Delivery Driver, Construction Worker, Manicurist, Babysitter, Mechanic, Carpenter, Tricycle Driver, Housekeeper, Dressmaker, Blacksmith, Machine Operator, Watchman, Sanitary Inspector, Cook/Binding, Helper, Maintenance Worker)	111	27.8
Nursing Attendant	1	0.3
Overseas Filipino Worker	2	0.5
Provincial Guard	1	0.3
Retiree	12	3.0
Seafarer	5	1.3
Security Guard	1	0.3
Senior Citizen	10	2.5
Student	12	3.0
Systems Engineer	1	0.3
Teacher	7	1.8
Unemployed	5	1.3
No response	10	2.5
Total	400	100.0

Monthly Income Distribution

Table 6 presents the monthly income distribution of respondents across the selected barangays in Nueva Valencia, Guimaras. The results indicate that the majority of respondents fall within the ₱10,000.00 or below income category, comprising 325 respondents (81.25%) of the total sample. This suggests that most households in the study area belong to the low-income bracket, reflecting limited earning capacity and dependence on small-scale livelihoods such as labor, farming, fishing, and micro-enterprises commonly observed in rural communities.

Across the barangays, Lanipe recorded the highest number of respondents earning ₱10,000.00 or below with 109 individuals (27.25%), followed by Salvacion with 97 respondents (24.25%) and Igang with 74 respondents (18.50%). Meanwhile, respondents earning ₱11,000.00–₱25,000.00 accounted for 57 individuals (14.25%), representing the second largest income group. Only a small proportion of respondents reported higher income levels, with very few earning ₱26,000.00–₱35,000.00 (9 respondents or 2.25%), ₱36,000.00–₱50,000.00 (3 respondents or 0.75%), and ₱51,000.00 and above (6 respondents or 1.50%).

The dominance of low-income households indicates potential economic vulnerability among residents within the watershed communities. From a watershed management perspective, this income profile highlights the need to integrate livelihood development and income-generating opportunities into conservation initiatives. Programs such as sustainable agriculture, community-based enterprises, and capacity-building activities may help improve household incomes while promoting environmentally responsible practices within the Igang Sub-Watershed area.

Watershed management also plays a crucial role in poverty alleviation and employment generation, particularly in rural areas. For example, Jemal pointed out that effective watershed management can mitigate issues such as soil erosion and land degradation, which are critical for sustaining agricultural productivity and, consequently, family income (Jemal, 2023). Furthermore, Maryati et al., (2018) emphasized that good watershed management can lead to increased employment opportunities and reduced urban migration, thus contributing to poverty reduction.

Table 6. Profile of the respondents as to monthly income.

Barangay	Income	Frequency	Percent
Sto. Domingo	10,000.00 or below	24	6.00
	11,000.00-25,000.00	9	2.25
	26,000.00 -35,000.00	2	0.50
	36,000.00-50,000.00	0	0.00
	51,000.00 and above	0	0.00
Lanipe	10,000.00 or below	109	27.25
	11,000.00-25,000.00	13	3.25
	26,000.00 -35,000.00	3	0.75
	36,000.00-50,000.00	1	0.25
	51,000.00 and above	2	0.50
Concordia Sur	10,000.00 or below	21	5.25
	11,000.00-25,000.00	2	0.50
	26,000.00 -35,000.00	0	0.00
	36,000.00-50,000.00	0	0.00
	51,000.00 and above	0	0.00
Salvacion	10,000.00 or below	97	24.25
	11,000.00-25,000.00	22	5.50
	26,000.00 -35,000.00	3	0.75
	36,000.00-50,000.00	2	0.50
	51,000.00 and above	3	0.75
Igang	10,000.00 or below	74	18.50
	11,000.00-25,000.00	11	2.75
	26,000.00 -35,000.00	1	0.25
	36,000.00-50,000.00	0	0.00
	51,000.00 and above	1	0.25
Total		400	100.0

Sources of Income Distribution

Table 7 presents the sources of income of respondents across the selected barangays in Nueva Valencia, Guimaras. The data show that respondents derive income from salary and wages, entrepreneurial activities, and other sources, while a considerable number of respondents provided no response. Among the reported sources, salary and wages accounted for 52 respondents (13.0%), while entrepreneurial activities comprised 65 respondents (16.25%), including small-scale business ventures. Meanwhile, other sources of income accounted for 84 respondents (21.0%), which may include irregular or informal earnings such as farming, fishing, remittances, or other livelihood activities.

Across the barangays, Lanipe recorded the highest number of respondents earning from salary and wages (28 or 7.0%), followed by Igang with 10 respondents (2.5%) and Concordia Sur with 8 respondents (2.0%). In terms of entrepreneurial activities, the highest number was also observed in Lanipe (27 or 6.8%), followed by Igang (22 or 5.5%) and Sto. Domingo (11 or 2.8%). On the other hand, Salvacion recorded the largest number of respondents under other income sources (37 or 9.3%), suggesting a reliance on alternative or informal livelihood activities within the barangay.

Notably, a significant proportion of respondents did not indicate their specific source of income, with 199 respondents (49.75%) recorded as no response. The highest number of non-responses was observed in Salvacion (89 or 22.3%) and Lanipe (52 or 13.0%). This may reflect irregular income patterns or respondents' reluctance to disclose financial information. From a watershed management perspective, understanding income sources is essential in designing livelihood-support programs and community-based conservation initiatives, as many households may depend on natural resources and small-scale economic activities within the watershed area.

One of the primary benefits of effective watershed management is the enhancement of agricultural productivity, crucial for rural income stability. For instance, Wani et al. (2011) demonstrated that interventions in watershed areas significantly increased crop productivity and average incomes, particularly during adverse climatic conditions, such as droughts. In their study, farmers in treated watershed areas maintained their livelihoods, while those in untreated areas experienced a drastic decline in agricultural income. This underscores the importance of integrating agricultural practices into watershed management to ensure economic resilience. Moreover, the adoption of improved agricultural practices within integrated watershed management (IWM) frameworks has been shown to increase net returns from agriculture, thereby enhancing the capacity of local communities to invest in their health and nutrition (Nerkar et al., 2015).

Table 7. Profile of the respondents as to sources of income.

Barangay	Sources	Frequency	Percent
Sto. Domingo	Salary and wages	6	1.5
	Entrepreneurial Activities	11	2.8
	Other sources	9	2.3
	No response	9	2.3
Lanipe	Salary and wages	28	7.0
	Entrepreneurial Activities	27	6.8
	Other sources	21	5.3
	No response	52	13.0
Concordia Sur	Salary and wages	8	2.0
	Entrepreneurial Activities	4	1.0

	Other sources	3	0.8
	No response	8	2.0
Salvacion	Salary and wages	0	0.0
	Entrepreneurial Activities	1	0.3
	Other sources	37	9.3
	No response	89	22.3
Igang	Salary and wages	10	2.5
	Entrepreneurial Activities	22	5.5
	Other sources	14	3.5
	No response	41	10.3
Total		400	100.0

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

The study assessed the socio-economic characteristics of residents in selected barangays surrounding the Igang Sub-Watershed in Nueva Valencia, Guimaras. The findings revealed that most respondents have long-term residence in their communities, belong to the economically productive age group, and are predominantly engaged in labor-based, informal, and small-scale livelihood activities such as entrepreneurship, farming, and fishing. In addition, the majority of households fall within the low-income bracket, indicating economic vulnerability and a strong dependence on local natural resources for livelihood. These socio-economic conditions demonstrate that community livelihoods, demographic characteristics, and economic realities play an important role in shaping participation and sustainability in watershed management initiatives.

RECOMMENDATION

Based on the findings of the study, it is recommended that local government units, watershed managers, and development partners integrate socio-economic considerations into the planning and implementation of watershed management programs in the Igang Sub-Watershed area. Sustainable livelihood development programs such as agroforestry, community-based enterprises, and environmentally responsible farming practices should be promoted to improve household income while supporting conservation efforts. Furthermore, strengthening environmental awareness campaigns, community participation, and gender-responsive approaches will help enhance local stewardship of watershed resources. Collaboration among the Nueva Valencia LGU, provincial government agencies, academic institutions, and local communities is also encouraged to support continuous research, monitoring, and capacity-building initiatives for sustainable watershed management.

REFERENCES

- Admas, M., Melesse, A. M., Abate, B., & Tegegne, G. (2022). Soil erosion, sediment yield, and run off modeling of the Megech watershed using the Geowepp model. *Hydrology*, 9(12), 208. <https://doi.org/10.3390/hydrology9120208>
- Agidew, A. A. and Singh, K. N. (2018). Factors affecting farmers' participation in watershed management programs in the northeastern highlands of Ethiopia: a case study in the Teleyayen sub-watershed. *Ecological Processes*, 7(1). <https://doi.org/10.1186/s13717-018-0128-6>
- Ariyani, N., Ariyanti, D., & Ramadhan, M. (2020). Pengaturan ideal tentang pengelolaan daerah aliran sungai di indonesia (studi di sungai serang kabupaten kulon progo). *Jurnal Hukum Ius Quia Iustum*, 27(3). <https://doi.org/10.20885/iustum.vol27.iss3.art8>
- Balanay, R. M., Aguilos, N. Z. A. M., Aguilos, M., Guinancias, A. R., Seronay, R. A., & Tangcogo, F. B. (2025). Community Well-Being and Willingness as Key Drivers of Watershed Conservation in Mt. Magdiwata Watershed and Forest Reserve in Northeastern Mindanao, Philippines. *Conservation*, 5(3), 53. <https://doi.org/10.3390/conservation5030053>
- Balta, D., Senapathy, M., marisennayya, P. M., & Awuchi, C. G. (2022). Farmers' participation in watershed management in the Sodo Zuria district of southern Ethiopia. *Turkish Journal of Agricultural Engineering Research*, 3(1), 51-63. <https://doi.org/10.46592/turkager.792744>
- Bunch, M. J., Parkes, M. W., Zubrycki, K., Venema, H. D., Hällström, L., Neudorffer, C., ... & Morrison, K. E. (2014). Watershed management and public health: an exploration of the intersection of two fields as reported in the literature from 2000 to 2010. *Environmental Management*, 54(2), 240-254. <https://doi.org/10.1007/s00267-014-0301-3>
- Castro, A. A., Vaughn, C. C., Julian, J. P., & García-Llorente, M. (2016). Social demand for ecosystem services and implications for watershed management. *JAWRA Journal of the American Water Resources Association*, 52(1), 209-221. <https://doi.org/10.1111/1752-1688.12379>
- Chen, B., Jin, F., & Zhu, Y. (2022). The impact of access to sanitary toilets on rural adult residents' health: evidence from the China family panel survey. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.1026714>
- Cheng, S., Li, Z., Uddin, S. M. N., Mang, H., Zhou, X., Zhang, J., ... & Zhang, L. (2018). Toilet revolution in China. *Journal of Environmental Management*, 216, 347-356. <https://doi.org/10.1016/j.jenvman.2017.09.043>

- Endayani, S., Sadono, R., Kusumandari, A., & Hartono, H. (2019). Social and Economic Vulnerability in The Sub-Watershed of Karang Mumus, East Kalimantan Province. *Jurnal Manajemen Hutan Tropika (Journal of Tropical Forest Management)*, 25(2), 93-103. <https://doi.org/10.7226/jtfm.25.2.93>
- Eryani, I. G. A. P., Manan, A. M. A., & Jayantari, M. W. (2021). Comparative analysis of watershed characteristics in Bali province for sustainable water resources management. *Indonesian Journal of Urban and Environmental Technology*, 210-227. <https://doi.org/10.25105/urbanenvirotech.v4i2.8862>
- Flotemersch, J. E., Leibowitz, S. G., Hill, R. A., Stoddard, J. L., Thoms, M., & Tharme, R. E. (2015). A watershed integrity definition and assessment approach to support strategic management of watersheds. *River Research and Applications*, 32(7), 1654-1671. <https://doi.org/10.1002/rra.2978>
- Garg, K. K., Karlberg, L., Barron, J., Wani, S. P., & Rockström, J. (2011). Assessing impacts of agricultural water interventions in the Kothapally watershed, southern India. *Hydrological Processes*, 26(3), 387-404. <https://doi.org/10.1002/hyp.8138>
- Ghose, B. K., Hassan, M. N., Islam, M., Howlader, R., Rahman, M. R., Mazumdar, Q. H., ... & Jahan, C. S. (2023). Morphometric and hypsometric analyses in prioritizing sub-watersheds of the drought-prone baring tract, nw Bangladesh: statistical and geospatial tools for soil conservation study. <https://doi.org/10.21203/rs.3.rs-3733353/v1>
- Gebretsadik, Z. M. (2013). Watershed degradation and the growing risk of erosion in Hawassa-zuria district, southern Ethiopia. *Journal of Flood Risk Management*, 7(2), 118-127. <https://doi.org/10.1111/jfr3.12033>
- Gedefaw, A. A., Desta, M. A., & Mansberger, R. (2024). Impacts of integrated watershed management interventions on land use land cover of Yesir watershed in northwestern Ethiopia. *Land*, 13(7), 918. <https://doi.org/10.3390/land13070918>
- Jariyah, N. A. and Pramono, I. B. (2018). KERENTANAN SOSIAL EKONOMI DAN BIOFISIK DAERAH ALIRAN SUNGAI SOLO (Socio-economic and biophysical vulnerability of Solo Watershed). *Jurnal Penelitian Pengelolaan Daerah Aliran Sungai*, 2(2), 89-110. <https://doi.org/10.20886/jppdas.2018.2.2.89-110>
- Jemal, K., Gadisa, M., & Bukaro, G. (2023). Description and evaluation of the present resource use, management practices, and socio-economic conditions in the Medo watershed, central Rift Valley area of Ethiopia. *Global Academic Journal of Agriculture and Biosciences*, 5(04), 86-99. <https://doi.org/10.36348/gajab.2023.v05i04.004>
- Johnson, N. L., Ravnborg, H. M., Westermann, O., & Probst, K. (2002). User participation in watershed management and research. *Water Policy*, 3(6), 507-520. [https://doi.org/10.1016/s1366-7017\(02\)00014-4](https://doi.org/10.1016/s1366-7017(02)00014-4)

- Katusiime, J. and Schütt, B. (2020). Linking land tenure and integrated watershed management—a review. *Sustainability*, 12(4), 1667. <https://doi.org/10.3390/su12041667>
- Kieti, R. N., Kauti, M. K., & Kisangau, D. P. (2016). Biophysical conditions and land use methods contributing to watershed degradation in Makueni County, Kenya. *Journal of Ecosystem & Ecography*, 06(04). <https://doi.org/10.4172/2157-7625.1000216>
- Kumar, D. and Kumar, D. (2022). Gender matters: reappraising the issues of equity, participation, and ownership in watershed management. *Contemporary Voice of Dalit*, 16(2), 214-231. <https://doi.org/10.1177/2455328x211063068>
- Lau, Y. (2021). Protecting the mountainous catchment area of the Kuang si waterfall, Lao Pdr. *Asia Pacific Viewpoint*, 63(2), 207-223. <https://doi.org/10.1111/apv.12316>
- Manojlović, S., Sibinović, M., Srejić, T., Novković, I., Milošević, M. V., Gatarić, D., ... & Batoćanin, N. (2022). Factors Controlling the Change of Soil Erosion Intensity in Mountain Watersheds in Serbia. *Frontiers in Environmental Science*, 10. <https://doi.org/10.3389/fenvs.2022.888901>
- Maryati, S., Eraku, S. S., & Kasim, M. (2018). Conservation management of agricultural land using geospatial approach (a case study in the Bone watershed, Gorontalo province, Indonesia). *E3S Web of Conferences*, 31, 08009. <https://doi.org/10.1051/e3sconf/20183108009>
- McDuff, M. M., Appelson, G. S., Jacobson, S. K., & Israel, G. D. (2008) Watershed management in north Florida: public knowledge, attitudes, and information needs. *Lake and Reservoir Management*, 24(1), 47-56. <https://doi.org/10.1080/07438140809354050>
- Moges, D. M. and Bhat, H. G. (2020). Watershed degradation and management practices in north-western highland Ethiopia. *Environmental Monitoring and Assessment*, 192(10). <https://doi.org/10.1007/s10661-020-08628-0>
- Napier, T. L., McCutcheon, K., & Fish, J. (2008). Factors affecting natural resource conservation investments of residents in the lower Big Walnut Creek watershed, Ohio. *Journal of Soil and Water Conservation*, 63(1), 18-28. <https://doi.org/10.2489/jswc.63.1.18>
- Narendra, B. H., Siregar, C. A., Dharmawan, I. W. S., Sukmana, A., Pratiwi, □., Pramono, I. B., ... & Yuwati, T. W. (2021). A review on the sustainability of watershed management in Indonesia. *Sustainability*, 13(19), 11125. <https://doi.org/10.3390/su131911125>
- Nugroho, H. Y. S. H., Sallata, M. K., Allo, M. D., Wahyuningrum, N., Supangat, A. B., Setiawan, O., ... & Najib, N. N. (2023). Incorporating traditional knowledge into science-based sociotechnical measures in upper watershed management: theoretical framework, existing practices and the way forward. *Sustainability*, 15(4), 3502. <https://doi.org/10.3390/su15043502>

- Nerkar, S., Tamhankar, A. J., Johansson, E., & Lundborg, C. S. (2013). Improvement in health and empowerment of families as a result of watershed management in a tribal area in India - a qualitative study. *BMC International Health and Human Rights*, 13(1). <https://doi.org/10.1186/1472-698x-13-42>
- Nerkar, S. S., Pathak, A., Lundborg, C. S., & Tamhankar, A. J. (2015). Can integrated watershed management contribute to the improvement of public health? A cross-sectional study from hilly tribal villages in India. *International Journal of Environmental Research and Public Health*, 12(3), 2653-2669. <https://doi.org/10.3390/ijerph120302653>
- Nugroho, H. Y. S. H., Sallata, M. K., Allo, M. D., Wahyuningrum, N., Supangat, A. B., Setiawan, O., ... & Najib, N. N. (2023). Incorporating traditional knowledge into science-based sociotechnical measures in upper watershed management: theoretical framework, existing practices and the way forward. *Sustainability*, 15(4), 3502. <https://doi.org/10.3390/su15043502>
- Padmaja, R., Kavitha, K., Pramanik, S., Duche, V. D., Singh, Y., Whitbread, A., ... & Leder, S. (2020). Gender transformative impacts from watershed interventions: insights from a mixed-methods study in the Bundelkhand region of India. *Transactions of the ASABE*, 63(1), 153-163. <https://doi.org/10.13031/trans.13568>
- Review on the role of integrated watershed management for rehabilitation of degraded land in Ethiopia. *Journal of Biology, Agriculture and Healthcare* (2019). <https://doi.org/10.7176/jbah/9-11-02>
- Saravanapavan, T. and Yamaji, E. (2018). Gwam—an institutional model to address watershed impacts from urbanization: a conceptual framework. *Journal of Water Resource and Protection*, 10(09), 896-905. <https://doi.org/10.4236/jwarp.2018.109052>
- Setyaningsih, W., Hadiyanto, H., & Putranto, T. T. (2022). Improvement of waste management through community awareness of plastic control in Garang watershed, Semarang City, Indonesia. *International Journal of Sustainable Development and Planning*, 17(2), 531-538. <https://doi.org/10.18280/ijdsdp.170218>
- Sriyana, S. (2019). Developed watershed classification index determining management priority level based on watershed carrying capacity. *MATEC Web of Conferences*, 270, 04004. <https://doi.org/10.1051/matecconf/201927004004>
- Sulaksono, H. B., Halik, G., & Wiyono, R. U. A. (2021). Performance Assessment of Bondoyudo Watershed Management. *Ukarst*, 5(1), 110. <https://doi.org/10.30737/ukarst.v5i1.1429>
- Tiwari, P., Tirumala, R. D., & Shukla, J. (2022). Household choices of sanitation infrastructure and impact on disease in India. *Environment and Planning B: Urban Analytics and City Science*, 49(8), 2054-2071. <https://doi.org/10.1177/23998083221088293>

- Vergara, J. T., Junco, E. P., Ibieza, D. B., Morada, N. G., & Luceño, N. A. (2024). Understanding the Socio-Economic Dynamics of Balcon Maravilla Residents: Foundations for Sor-Ohan Sub-Watershed Planning. *International Journal of Research and Innovation in Social Science*, VIII(XV), 252-258. <https://doi.org/10.47772/ijriss.2024.815ec0020>
- Vu, S., Jain, A., Harrison, C., Ghimire, P., & Graham, J. P. (2022). "someone should be there to take care of it": a case study of users' views of managed shared sanitation facilities in Jharkhand, India. *The American Journal of Tropical Medicine and Hygiene*, 106(4), 1135-1140. <https://doi.org/10.4269/ajtmh.21-0654>
- Wani, S. P., Dixin, Y., Zhong, L., Dar, W. D., & Chander, G. (2011). Enhancing agricultural productivity and rural incomes through sustainable use of natural resources in the semi-arid tropics. *Journal of the Science of Food and Agriculture*, 92(5), 1054-1063. <https://doi.org/10.1002/jsfa.4721>
- Zeng, D., Chen, B., Wang, J., Innes, J. L., Lu, J., Guo, F, ... & Wang, G. (2023). Evolving environmental awareness and shifts in management priorities: a socioeconomic lens on the Min River basin, china. *Frontiers in Environmental Science*, 11. <https://doi.org/10.3389/fenvs.2023.1257089>