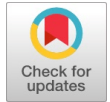


Livelihood in Selected Coastal Areas in Ilocos Norte and Its Socio-Economic Dimension

Susan G. Aquino, Sherlyn B. Nicolas



Abstract: Livelihoods are diverse and made up of multiple activities depending on the available assets to earn a living. Aside from fishing as the only major source of income for coastal dwellers, are there other means of livelihood that a coastal area can offer? This document will help us understand the complexity of coastal livelihoods and an idea on the alternative livelihoods within the coastal area. Result will be used to document and measure the socio-economic benefits and costs of different livelihood, and will also set limits and policies that are really adaptable in protecting our coastal resources. Purposive sampling was done with the assistance of the Department of Agriculture-Municipal Agriculture and Fishery Council (DA-MAFC) who identified the respondents. Descriptive statistics, frequency counts, percentages and means were used to treat data collected. Results show that there exist some variations of livelihood along coastal areas like seaweed gathering, salt-making, stone and shell picking and crafting. There are also alternative source that would complement these traditional coastal means of livelihood like boat-making/boat for hire, making of fishing materials, fire woods gathering and homestay. It is necessary to employ interventions which help to strengthen capacity building in coastal communities. Trainings to improve their craft and packing should also be applied.

Key words: Livelihoods, Alternative Source, Coastal Resources, Capacity Building

I. INTRODUCTION

Livelihoods are diverse and are made up of multiple activities to achieve a desired outcome. They are also determined by what assets are available at the household level in terms of ownership and access. Depending on household assets people undertake a diverse array of activities to earn their living. Choices are conditioned by the extent of and access to the asset base. Therefore, certain activities are common everywhere and to everyone and others are typical of specific environments such as the coast and to certain social groups. It is a common perception that fishing is a major source of income for coastal dwellers. The Philippines being an archipelago is characterized by numerous coastal areas which unfortunately are inhabited by one of the country's poorest sector, the fishers' sector.

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Stories of poverty-stricken families who have to live on what the sea can offer are often told and retold to picture a depressing situation for this sector.

Shall we forever condition our minds to believe that fishing can be the only source of living in a coastal community? Or are there other means of livelihood that a coastal area can offer? This document will help us understand the complexity of coastal livelihoods and will also give us idea on the alternative livelihoods within the coastal areas. Generally, this study aims to determine the socio-economic aspect for coastal dwellers in selected coastal areas in Ilocos Norte

Specifically, it aims to:

1. determine the profile of the coastal population in the area;
2. determine the extent of the activity as to the source of income; and,
3. determine the socio-economic status of the coastal populace who depend so much on the coastal source.

Significance of the Study

Results of the study will be used as tools not only to document and measure the socio-economic benefits and costs of different livelihood from coastal resource but also to set limits and policies that are really, adaptable in protecting our coastal resources. For rational resource management, the coastal community can manage and protect species in a way that works best for everyone. It is also useful for policy makers who wish to set targets for sustainable policies and in guiding management efforts that are geared towards keeping the socio-economic and environment conditions of coastal areas – the real essence of sustainability. Moreover, results of this study will also be useful in coming up with an accounting framework to be used in related research and extension activities. Specifically, planners and implementers will be provided with a planning methodology that enables them to assess the resiliency and vulnerability of the coastal community.

II. REVIEW OF RELATED LITERATURE

Livelihoods are defined as adequate stocks and flows of food and cash to meet basic needs as the way people combine their capabilities, skills and knowledge with the assets at their disposal to create activities that will enable them to make a living. A livelihood is said to be sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resources base (Chambers and Conway 1992, [3]).



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The concept of “alternative livelihood” has emerged where natural resources, such as the coast, have come under increasing pressure and current use patterns are no longer considered to be sustainable. The goal of alternative livelihoods is not simply to come up with an alternative activity that theoretically provides choice and hopefully promotes sustainability as much of the current work in this area seems to do. Rather the goal is to find solutions that fit with people’s current livelihood strategies and that will have positive impact on their livelihoods and the use of natural resources. It is this complex and diverse natural system that actually creates a wide array of opportunities and threats for people living along the coast. It is these opportunities, set within the broader context and reality of the political economy which they are being pursued, that we are referring to when we talk of coastal livelihoods (Claire Ireland, et al. 2004, [4][12]).

Livelihood vulnerability. Fishermen's livelihoods basically are vulnerable to risks and uncertainties from various characters, such as biophysics, abiotic, climate, environmental, biotic and economics. The scale of the impact of climate changes on of rural households' livelihoods will largely be determined by the size of their livelihoods exposed to a hazardous environment, so it requires the adaptive capacity of households to withstand devastating threats and the sensitivity of each household in responding to these threats. The livelihoods approach focuses on the context of livelihoods built by farmers or fishermen in using livelihood capital, institutions, livelihood strategies and calculating livelihood impacts. The level of vulnerability and resilience of rural households to resist the destructive forces that come into their livelihoods includes several dimensions, namely biophysical, economic, and socio-cultural. The complexity of the interconnections between these dimensions and the scale of the business managed by fishermen will determine the level of vulnerability to tolerate while increasing the resilience of livelihoods. Livelihood resilience can be understood as the capacity of the system to keep livelihoods functioning despite external forces and changes that make the system vulnerable. In the last decade, vulnerability research has tended to emphasize threats and the sensitivity and adaptive capacity of some elements of society (Idham, I. I., et al., 2022, [5]).

Traditionally, marine fishing was a communal activity, with each member contributing to the effort in kind. There has been a shift in fishing operations from subsistence-based artisanal occupations to profit-oriented business transactions, and this has rendered redundant the traditional skills, knowledge and manual labour abilities of the poor – their most important assets. It is the open-access or common property nature of the sea that attracts large numbers of poor people to find their livelihoods there, and they are badly affected when the terms of access to the resource change. Open access allows the entry of bigger players into the sector, which come to dominate or even monopolize access to resources – often with the facilitation of the state – and marginalize traditional stakeholders (FAO, 2006) [1].

Coastal livelihood strategies. Livelihood is never just a matter of finding or making shelter, transacting money, and preparing food to put on the table or exchange in the market place. It is equally a matter of the ownership and circulation of information, the management of relationships, the affirmation of personal significance and group identity, and the interrelation of each of those tasks to the other. All these productive tasks together constitute the work of livelihood. Livelihood as an umbrella concept suggests the layering and overlapping features of social life. Livelihoods was examined through a number of observable features associated with patterns of work and interaction (livelihood as occupation and as social capital). The research team operationalized livelihood through an investigation of such concepts as division of labor by gender, household resources and questions of access and control of resources; productive and reproductive labor; and forms of social capital and networks (Asong, R.H., et. al., 2000, [8]).

Socio-Economic Dimension. Stable, sustainable economic development cannot be achieved unless and until social development also takes place. Consequently, the social dimensions of economic development and productivity are as important as the economic dimensions. It is recognised that fisheries are not isolated economic activities but are part of complex local social-ecological systems. Understanding fisher behaviours and responses to policy, economic environmental and social change requires data on the structure of the catching sub-sector, including linkages and the local social and economic determinants of fisher decision-making (Carlson, Beverly, 1999, [2][9][10][11])

III. CONCEPTUAL FRAMEWORK

Relatively, development of alternative livelihoods has become a popular policy to uplift the socio-economic status of small-scale fishers and to reduce fishing pressure on overexploited fisheries. Other coastal livelihood has been incorporated into many community-based coastal resource management projects such as seashell and stone gathering and crafting, salt-making and seaweed gathering as an alternative livelihood option for fishers in tropical developing countries. Fishing is generally a male-dominated activity, but within the small family enterprises in particular, the wife/partner and extended family may provide the fisherman with onshore support. Fishing households might comprise a very small proportion of the total households, even in coastal areas, yet they are seen to represent the tradition of fishing and the sense of interconnection between industry, family, locality and community and have symbolic significance for community beyond their numbers.

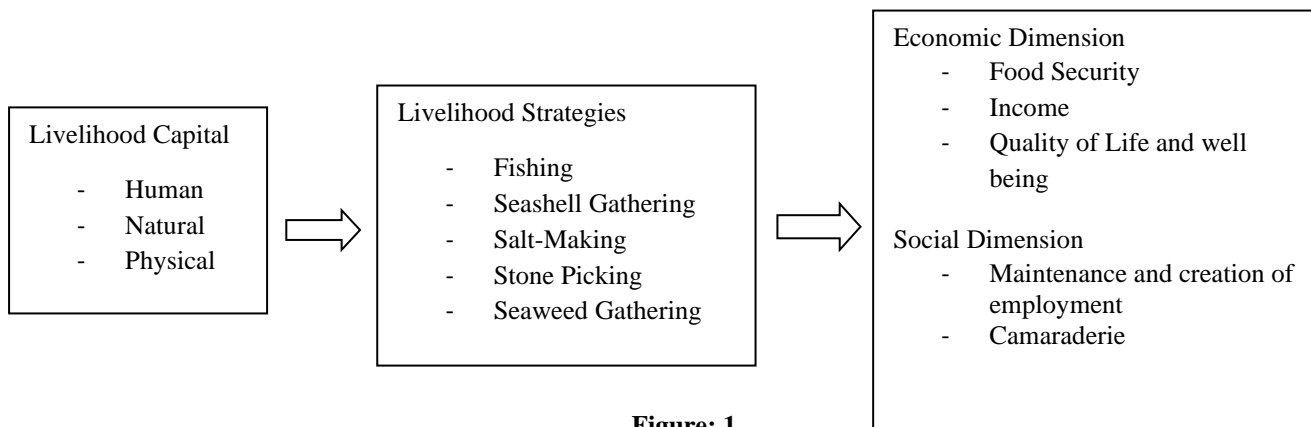


Figure: 1

The conceptual framework in the livelihood strategies and economic dimension of selected coastal areas

and means were used to treat all data collected. The Interview Schedule

IV. METHODOLOGY

Research Area

This study was conducted in selected coastal towns in Ilocos Norte specifically the population along coastal barangays and communities. The towns identified are:

- Pasuquin
- Burgos
- Bangui
- Pagudpud
- Badoc

The respondents:

Purposive sampling was done in this research. Some officers and members of the organized fishery group were identified and were recommended. So are the seaweed gatherers, salt-makers and seashell gatherer and crafting. The stone pickers were just merely located and were identified with the assistance of the DA-MAFC officer.

Statistical Analysis. A descriptive statistics was used in treating the data gathered. Frequency counts, percentages

The primary data collection tool used in this study was semi-structured interview using a common template that were implemented through focus groups with key local informants in the community and fishing sector. Focus group was used because it provide opportunities for questioning and interaction among participants that provides additional data that were not included in the interview schedule.

Before the conduct of the study, the researcher asked permission and requested the assistance and cooperation of the LGUs and organizations in the area. Through them, the sites and the respondents of the study were identified.

V. RESULTS AND DISCUSSION

Livelihoods are context specific, so where one coastal community may be involved in the sale of shells and crafted shells as their main livelihood source, another coastal village with the same natural resource base may be engaged in other livelihood strategy as they do not have access to shell and crafted shells.

Table 1. The Distribution of The Respondents by Place of Origin

Coastal Areas	Coastal Activities				
	Seaweed Gathering	Seashell Picking/crafting	Stone Picking	Salt Making	Fishing
Pasuquin	4	6	10	4	10
Burgos	23	10	7	5	4
Bangui	3	5	5	0	5
Pagudpud	2	15	4	0	13
Badoc	3	0	0	12	3
Total	35	36	26	21	35

A. Seaweed Gathering

Development of alternative livelihoods has become a popular policy to uplift the socio economic status of small-scale fishers and to reduce fishing pressure on over exploited fisheries. Seaweed farming has been incorporated into many community-based coastal resources management projects and fisheries management initiatives as an alternative livelihood option for fishers in tropical developing countries. Hence, the resources of the sea are not only confined to animal products such as fish, crustaceans and mollusks but also include a myriad of plant products most notably the edible seaweeds.

The frequency distribution of the respondents in seaweed gathering based on their personal and socio economic characteristics is shown in Table 2 that includes age, educational attainment, experience in seaweed gathering, income, expenses and dwelling. The average age of the respondent is 51. In the educational attainment, majority of the female seaweed gatherers have medium level of education, secondary (72%). Nobody from among the respondents reached college level.



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This result showing low level of education on the part of the male respondents implies their poor economic condition. According to the respondents they stopped schooling due to financial constraint, hence, they prefer to indulge in fishery activities for their survival than to get higher education. Majority of the seaweed gatherers are also middle-aged (55.6 and 65.4% respectively), generally the prime age when a person is more active, therefore, should be more productive. While the main source of income of the respondents is seaweed gathering, they complement their income thru other coastal activities like stone and shell picking on the part of the females. Others have it from non-coastal means like selling goods and as house help (23%). On the other hand, males when off the sea are into farming,

carpentry, construction and tricycle-driving. Generally, the annual gross family income is relatively low (44.4%) for which, majority are called economically deprived. The report of NSBC states that “anyone earning some percentage ‘less than average’ is in poverty. Data shows that 50% of the respondents belong to the poverty line. Low family income goes with a low expenses (60%).

If there’s one thing about the respondents, all of them (100%) own the house and lot where they are living and with permanent dwelling (88.5%). The respondents of seaweed gathering in this study are the organized gamet gatherers in Burgos. While they claim to gather other kinds of seaweeds like the kulot, labig, salingongo etc, gamet is giving them the best price among these kinds.

Table 2. Frequency Distribution of the Respondents in Seaweed Gathering Based on their Personal and Socio-Economic Characteristics

Personal Characteristics	Male		Female	
	Freq	Percent	Freq	Percent
Age				
Young (37 and below)	2	6.0	3	9.0
Middle (38 – 47)	5	14.0	17	48.0
Old (48 and above)	2	6.0	6	17.0
Educational Attainment				
Elementary	5	14.0	6	17.0
Secondary	3	9.0	18	51.0
College	1	3.0	2	6.0
Experience in SW gathering				
Short (23 and below)	2	6.0	6	17.0
Medium (24 – 33)	5	14.0	15	43.0
Long (34 and above)	2	6.0	5	14.0
Gross income				
Low (4000 and below	4	11.0	12	34.0
Average (4001- 5000)	3	9.0	6	17.0
High (5001 and above)	2	6.0	8	22.0
Other source of Income				
Coastal resource				
Low (3,500 and below)	5	14.0	7	20.0
Average (3,501 – 4,500)	2	6.0	14	40.0
High (4,501 and above)	2	6.0	5	14.0
Non-Coastal				
Low (3,000 and below)	3	9.0	17	49.0
Average (3001 – 4000)	5	14.0	6	17.0
High (4001 and above)	1	3.0	3	9.0
Expenses				
Low (2,500 and below)	3	9.0	8	23.0
Average (2,501 – 3,000)	5	14.0	12	34.0
High (3001 and above)	1	3.0	6	17.0
Type of Housing				
Temporary	0	0	0	0
Semi-Temp	0	0	0	0
Permanent	9	26.0	26	74.0
Ownership				
House				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	9	26.0	26	74.0
Lot				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	9	26.0	26	74.0

In Table 3, it shows the different kinds of seaweeds being gathered. While they consume what they gathered, that is, after setting-aside volume for sale. Buyers are from private individuals to middlemen, some are ordered, specially the kanot-kanot (gracilaria) which are being processed as jelly. Still, gamet sets the highest price which

is around 500-700 pesos/ganta or “per ikamen” (approx. 2 x3 ft) when dried.

This is so because it is seasonal and of limited source areas in Pagudpud. because gamet can only be find in Burgos and a few coastal

Table 3. Seaweed Gathering Analysis.

Type of Seaweeds	Home consumption	For sale	Buyers		
			Pvt	Mdlmen	Others
Caulerpa racemosa (Ar- arosep)	X	X	X	X	
Hydroclatus clathratus (Bal-ballulang)	X	X	X	X	
Betaphycus gelatinum (Ang-gapang)	X	X	X	X	
Callophyllis sp (Lab-labig)	X	X	X	X	
Carpopeltis formosana (salingongo)	X	X	X	X	
Gracilaria arcuate (Kanut-kanot)	X	X	X	X	X
Halymania spp. (gayong-gayong)	X	X	X	X	
Codium spp. (Pok-poklo)	X	X	X	X	
G. coronopifolia (Kao-kaoyan)	X	X	X	X	
Acanthopora specifera (Kulot)	X	X	X	X	
Porphyra spp (Gamet)	X	X	X	X	X

In Table 4, from “a ready and more foods on the table and purchased gadgets like cellphones etc is 100% achieved. They were able to save (28%) and have their dwellings improved (26%). While they claimed they do not have

additional helpers (100%), all of them were able to send their children to school (100%). This goes to show that they are giving priority to education of their children. All of them (100%) claimed “yes” socially and economically improved.

Table 4. Economic Dimension Analysis in SW Gathering

ECONOMIC DIMENSION	Yes	Freq (%)	No	Freq (%)
Savings	28	80	7	20
Improved house/dwelling	26	74.3	9	25.7
Ready and more foods at the table	35	100	0	0
Purchased gadget/celphones etc	35	100	0	0
Bought more appliances	23	65.7	12	34.3
Equipment, i.e., kuliglig/banca/etc	22	63	13	37
Send children to school	35	100	0	0
Are there additional paid helper now	0	0	35	100
Is there an economic dimension socially and economically	35	100	0	0

B. Seashell Gathering/crafting

Seashells are one of the most abundant and diverse among nature’s myriad marine resources. They have been valued by man as religious symbols, artifacts and decorative or ornamental objects. Shells are external skeletons of molluscs. They provide support and protection for the soft-bodied molluscs. The natural beauty of seashells attracts more people, particularly those whose hobby is shell collection. Shells provide a source of livelihood for coastal dwellers. But while shell craft provides economic benefits, it also poses ecological hazards. Gathering of dead shells through digging, particularly in sea grass areas, destroys the coastal area’s natural processes. Also, the chemicals used in shell craft production and which are thrown into the sea could pollute the coastal water, thus harming marine life including molluscs themselves. It is for this reason that the government has instituted a number of measures to protect the habitat of seashells and continue to thrive and provide food and other benefits to man.

Seashell gathering and ultimately crafting are important livelihood from coastal’s ecosystems: they provide materials for displays and other arts and crafts as an additional source of income.

Table 5 shows the frequency distribution of the respondents in this sector. They are the officers and members Saud White Sand Shell Craft Producers’ Association. All of them are females and lately, they have male members and are now increasing in numbers. Some other pickers outside the association were interviewed too to verify the data gathered.

In their middle age (52%), and are equipped with secondary level of education (52%), majority of the seashell pickers and crafters are in medium level of experience (48%) with most (68%) in their average gross income. Others have supplement income from other coastal source like seaweed gathering, others have it from non-coastal like crocheting and sari-sari store.

Table 5. Frequency Distribution of the Respondents in Seashell Gathering/Crafting Based on Their Personal and Socio-Economic Characteristics

Personal Characteristics	Male		Female	
	Freq	Percent	Freq	Percent
Age				
Young (33 and below)	0	0	7	23.0
Middle (34 – 42)	0	0	16	52.0
Old (43 and above)	0	0	8	25.0
Educational Attainment				
Elementary	0	0	5	16.0
Secondary	0	0	23	74.0
College	0	0	3	10.0



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Experience in seashell gathering/crafting				
Short (12 and below)	0	0	7	23.0
Medium (13 – 22)	0	0	15	48.0
Long (23 and above)	0	0	9	29.0
Gross income				
Low (4,500 and below)	0	0	4	13.0
Average (4,501 – 6500)	0	0	21	68.0
High (6501 and above)	0	0	6	19.0
Other source of Income				
Coastal resource				
Low (3,000 and below)	0	0	11	36.0
Average (3001 – 4,000)	0	0	17	54.0
High (4001 and above)	0	0	3	10.0
Non-Coastal				
Low (2,500 and below)	0	0	8	25.0
Average (2501 – 3,500)	0	0	19	62.0
High (3501 and above)	0	0	4	13.0
Expenses				
Low (2,500 and below)	0	0	9	29.0
Average (2501 – 3,500)	0	0	20	64.5
High (3,501 and above)	0	0	2	6.5
Type of Housing				
Temporary	0	0	0	0
Semi-Perm	0	0	0	0
Permanent	0	0	31	100
Ownership				
House and Lot				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	0	0	31	100

These organized women craft shell for souvenir items such as table décor, grotto, necklace, bracelets, among others and peddled their products to the tourists visiting the area. The income then was not enticing as tourist can always demand for the price they wish to the sellers. Moreover, the products do not command higher price because of poor quality. But then the intervention from MMSU paved the

way to an improved shell products. MMSU asked DTI and DSWD for their assistance to improve their craft and help them register their organization. All the kinds of shells that were picked were “for sale as it is” and some are also crafted then for sale. They were trained for the craft and buyers are from private individuals to some middlemen and tourists (Table 6).

Table 6. Seashell Gathering/Crafting Analysis

Type of shell	For sale		Craft then for sale		Buyers		
	Yes	No	Yes	No	Pvt	Middlemen	Others
butiki	X		X		X	X	X
marumpi	X		X		X	X	X
lasuit	X		X		X	X	X
baka-baka	X		X		X	X	X
bura	X		X		X	X	X
Others	X		X		X	X	

In Table 7, majority are into positive comment specifically on “ready and more foods at the table and purchased gadget respectively (100%), followed by improved house/dwelling (90%) and in which some are even put-up properties as homestay during summer and holidays.

With bigger capital (74%), they are able to buy equipment now. It is interesting to note that some seashell gatherers/crafters can afford to have paid helper now (22.2%). Sending children to school is on top too because they are now economically well-off (100%).

Table 7. Economic Dimension Analysis in Seashell Gathering/Crafting

ECONOMIC DIMENSION	Yes	Freq (%)	No	Freq (%)
Bigger capital	23	74	8	26
Savings	19	61.3	12	38.7
Improved house/dwelling	28	90	3	10
Ready and more foods at the table	31	100	0	0
Purchased gadget/celphones etc	31	100	0	0
Properties/homestay	12	39	19	61
Bike/motor/jeep/car	18	58	13	42
Send children to school Others	31	0	0	0
Are there additional paid helper now	7	22.6	24	77.4
Is there an economic dimension socially and economically	31	100	0	0

C. Stone Picking

In Table 8 below, the age of the stone pickers are middle-aged (50%). More women have higher education, in secondary (75%) than male (33.3%). The middle-aged male have higher (50%) experience in stone picking. Both male and female have average gross income (50%). Still, coastal is still a source of alternative income with a 50% low on

female but 50% average for male. Non-coastal source of livelihood is also evident in the report with both (50% each) are into average level that goes with a low expenses (50% and 60%) respectively. Still, owning house and lot is a must with permanent dwelling (100%)

Table 8. Frequency Distribution of the Respondents in Stone-Picking Based on their Personal and Socio-Economic Characteristics

Personal Characteristics	Male		Female	
	Frequency	Percent	Frequency	Percent
Age				
Young (43 and below)	2	8.0	6	23.0
Middle (44-57)	3	12.0	10	38.0
Old (58 and above)	1	4.0	4	16.0
Educational Attainment				
Elementary	3	12.0	3	12.0
Secondary	2	8.0	15	57.0
College	1	4.0	2	8.0
Experience in Stone picking				
Short (20 and below)	2	8.0	8	31.0
Medium (21 -31)	3	12.0	8	31.0
Long (32 and above)	1	4.0	4	16.0
Gross income				
Low (3,500 and below)	2	8.0	6	23.0
Average (3,501 – 6000)	3	12.0	10	38.0
High (6,001 and above)	1	4.0	4	16.0
Other source of Income				
Coastal resource				
Low (2,500 and below)	1	4.0	10	38.0
Average (2,501 – 5,000)	3	12.0	7	27.0
High (5,001 and above)	2	8.0	3	12.0
Non-Coastal				
Low (3,000 and below)	2	8.0	8	31.0
Average (3,001 – 6,000)	3	12.0	10	38.0
High (6,001 and above)	1	4.0	2	8.0
Expenses				
Low (2,000 and below)	3	12.0	12	46.0
Average (2001 – 4,000)	2	8.0	6	23.0
High (4,001 and above)	1	4.0	2	8.0
Type of Housing				
Temporary	0	0	0	0
Semi-Temp	0	0	0	0
Permanent	6	23	20	77
Ownership				
House and Lot				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	6	23	20	77

The stones are displayed as it is, Table 9. For the rocks, depending on the preference of the buyer, they will cut and sculpt it accordingly. Stones are priced at 35-45 pesos per

pail. Buyers ranges from an individual in just a small volume to gardeners and who are into landscaping business. Some buy it to transport and re-sell at a higher price.

Table 9. Stone-Picking Analysis

Type of stones	For sale (as it is)		Craft then for sale		Buyers		
	Yes	No	Yes	No	Private	Middlemen	Others
pebbles	x			x	x	x	
Faded-colored	x			x	x	x	
Egg stones	x			x	x	x	
Common gray rough	x			x	x	x	
Grayish black	x			x	x	x	
Ordinary round	x			x	x	x	
Marmol-like	x			x	x	x	
Jade-like	x			x	x	x	
rock	x			x	x	x	

In Table 10, with ready and more foods at the table (100%), they also save (77%) with improved dwelling/housing (88%). While 100% said they don't have bigger capital, they purchased gadgets (100%) and still can

send their children to school (100%). They don't hire additional helper (100%) but still claimed socio-economically well-off.



Table 10. Economic Dimension Analysis in Stone-Picking

ECONOMIC DIMENSION	Yes	Freq	No	Freq
Bigger capital	0	0	26	100
Savings	20	77.0	6	23.0
Improved house/dwelling	23	88.5	3	11.5
Ready and more foods at the table	26	100	0	0
Purchased gadget/celphones etc	26	100	0	0
Bought more appliances	20	77.0	6	23.0
Send children to school	26	100	0	0
Bigger volume now	20	77.0	6	23.0
Are there additional paid helper now	0	0	26	100
Is there an economic dimension socially and economically	26	100	0	0

D. Salt-Making

Salt is an important commodity in many of the world’s early economies. It is widely produced, traded, used and consumed. Traditionally, salt was produced from a variety of sources including salt rock, brine springs and seawater. In areas rich in these resources, people developed ways to exploit them, and those without the natural resources found ways to obtain salt through trade. While the potential of the salt industry is huge because of its universal need, what ultimately doomed it is the seasonal pattern change due to climate change and salt producers’ reliance on age-old production methods. These two factors combined badly affects salt farms that lead to the continuous decline of the industry and the country’s dependence on more imports

in order to keep up with local demands. (Philippine Salt Industry, 2017, [7])

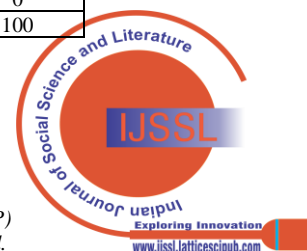
Salt-making is a cottage industry here in Ilocos’ coastal areas since the salt beds along the seashore is ideal for salt-making because of presence of good corals and sands. So, aside from using them as seasoning, it is also a part of their livelihood. Lots of vendors are selling salt on the road.

Majority of salt makers in Table 11 are in their middle age (46.6% and 50%)

with secondary level of education (53.3% and 50%) respectively. With medium (53.3% and 50%) experience in salt-making, they have an average gross income (60% and 66.6%). To supplement their income, majority have it at an average income from coastal source like seaweed gathering, stone and shell picking to non-coastal like farming and carpentry (66.6% and 50%).

Table 11. Frequency Distribution of the Respondents in Salt-Making Based on Their Personal and Socio-Economic Characteristics

Personal Characteristics	Male		Female	
	Frequency	Percent	Frequency	Percent
Age				
Young (43 and below)	4	19.0	2	10.0
Middle (44 – 57)	7	33.0	3	14.0
Old (58 and above)	4	19.0	1	5.0
Educational Attainment				
Elementary	4	19.0	2	10.0
Secondary	8	38.0	3	14.0
College	3	14.0	1	5.0
Experience in salt-making				
Short (27 and below)	3	14.0	1	5.0
Medium (28 – 40)	8	38.0	3	14.0
Long (41 and above)	4	19.0	2	10.0
Gross income				
Low (5000 and below)	4	19.0	1	5.0
Average (5001 – 8,000)	9	43.0	4	19.0
High (8001 and above)	2	10.0	1	5.0
Other source of Income				
Coastal resource				
Low (5,000 and below)	6	29.0	2	10.0
Average (5001-8000)	8	38.0	2	10.0
High (8001 and above)	1	5.0	2	10.0
Non-Coastal				
Low (3,000 and below)	2	10.0	2	10.0
Average (3001 – 7,000)	10	48.0	3	14.0
High (7001 and above)	3	14.0	1	5.0
Expenses				
Low (2,500 and below)	4	19.0	2	10.0
Average (2501 – 4,500)	9	43.0	3	14.0
High (4501 and above)	2	10.0	1	5.0
Type of Housing				
Temporary	0	0	0	0
Semi-Temp	0	0	0	0
Permanent	15	100	6	100



Ownership				
House	0	0	0	0
Tenant	0	0	0	0
Amortized				
Owner	15	100	6	100
Lot				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	15	100	6	100

Salt is being sold at 200 pesos per can and could be bartered. One cavan salt is being bartered at one cavan of palay. In Table 12, evident is shown on “ready and more foods, purchased gadgets and equipment (100%). With

bigger volume of produce (90%) so they have to hire additional hands (67%). While 71.4% can save, 100% can able to send their children to school. There are still, 85%, said “yes” to socially and economically advantaged.

Table 12. Economic Dimension Analysis in Salt-Making

ECONOMIC DIMENSION	Yes	Freq (%)	No	Freq (%)
Bigger capital	14	67.0	7	33.0
Savings	15	71.4	6	28.6
Improved house/dwelling	13	62.0	8	38.0
Ready and more foods at the table	21	100	0	0
Purchased gadget/cellphones, appliances, etc	21	100	0	0
Equipment, i.e., kuliglig/banca/etc	21	100	0	0
Send children to school Others	21	100	0	0
Bigger volume now	19	90	2	10
Are there additional paid helper now	14	67.0	7	33.0
Is there an economic dimension socially and economically	18	85.7	3	14.3

E. Fishing

Fishing has become the major industry specifically in developing countries, and across globe which is continuously gaining importance among the working people groups. This fishing not only serves the food requirement of the low income and the high income people in the country but is also the source of employment for millions who strives to live and earn through it, and apart from it, fulfils various other social benefits attached to it.

The belief that men do the actual fishing is still evident in this study (Table 13). Fishing is still a one hundred

percent man’s domain. Not a single female is into fishing into this study.

With majority are into middle-age (48.6%) with secondary education (65.7), they have a medium experience in fishing (45.7%). Their catch is giving them from an average gross income, 48.5%, followed by high in gross of 34.3%. Still with their income from fishing, they still need to supplement it by other means, from coastal and non-coastal source with both an average income of average level at 51.4% and 54.2% respectively. This goes with their average expenses at 51.4%. They own their house and lot with their permanent dwelling (100%).

Table 13. Frequency Distribution of the Respondents in Fishing Based on Their Personal and Socio-Economic Characteristics

Personal Characteristics	Male		Female	
	Frequency	Percent	Frequency	Percent
Age				
Young (34 and below)	13	37.1	0	0
Middle (35 -67)	17	48.6	0	0
Old (68 and above)	5	14.3	0	0
Educational Attainment				
Elementary	9	25.7	0	0
Secondary	23	65.7	0	0
College	3	8.6	0	0
Experience in fishing				
Short (23 and below)	6	17.2	0	0
Medium (24 – 48)	16	45.7	0	0
Long (49 and above)	13	37.1	0	0
Gross income				
Low (4,000 and below)	6	17.2	0	0
Average (4001 – 7,000)	17	48.5	0	0
High (7,001 and above)	12	34.3	0	0
Other source of Income				
Coastal resource				
Low (3,500 and below)	9	25.7	0	0
Average (3,501 – 5,500)	18	51.4	0	0
High (5,501 and above)	8	22.9	0	0
Non-Coastal				
Low (2,500 and below)	10	28.6	0	0



Livelihood in Selected Coastal Areas in Ilocos Norte and Its Socio-Economic Dimension

Average (2,501 – 5,000)	19	54.2	0	0
High (5,001 and above)	6	17.2	0	0
Expenses				
Low (3,000 and below)	11	31.4	0	0
Average (3,001 – 4,500)	18	51.4	0	0
High (4,501 and above)	6	17.2	0	0
Type of Housing				
Temporary	0	0	0	0
Semi-Temp	0	0	0	0
Permanent	35	35	0	0
Ownership				
House				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	35	35	0	0
Lot				
Tenant	0	0	0	0
Amortized	0	0	0	0
Owner	35	35	0	0

Those who are engaged in fishing as a profession for ages fetch a lot of money, fishing as a source of livelihood activity can be started up with low cost investment as well, whereas there is no limit of invested amount because it further depends on the location, plant size, and type of fish

and market to be served. In Table 14 is the kind of fish these fishermen have. Their prices vary with every kind like malaga, talakitok, lapu-lapu and maya-maya command the highest price.

Table 14. Kind of Fish Catch

Kind of Fish	Home consumption	For sale	Buyers		
			Pvt	Middlemen	Others
Dumadara	x	x	x	x	
Malaga	x	x	x	x	
Talakitok	x	x	x	x	
Durado	x	x	x	x	
Bisugo	x	x	x	x	
Dalagang Bukid	x	x	x	x	
Blue Marlin	x	x	x	x	
Galunggong	x	x	x	x	
Flying fish	x	x	x	x	
Labahita	x	x	x	x	
Lapu-lapu	x	x	x	x	
Maya-maya	x	x	x	x	
Sapsap	x	x	x	x	
Tanguige	x	x	x	x	
Others (octopus, squid, etc)					

Table 15 below shows that 100% have “ready food and purchased gadgets, bigger capital of 51.4% yes is not far from 48.6% “no” and so are the rest of the items in

measuring economic dimension. Although 100% can send their children to school, there is still a significant disparity for the economic dimension of 71% and 29% respectively.

Table 15. Economic Dimension Analysis in Fishing

ECONOMIC DIMENSION	Yes	Freq	No	Freq
Bigger capital	18	51.4	17	48.6
Savings	12	34.3	23	65.7
Improved house/dwelling	20	57.1	15	42.9
Ready and more foods at the table	35	100	0	0
Purchased gadget/celphones etc	35	100	0	0
Bought more appliances	23	65.7	12	34.3
Equipment, i.e., kuliglig/banca/etc	27	77.1	8	22.9
Send children to school Others	35	100	0	0
Are there additional paid helper now	2	6.0	33	94.0
Is there an economic dimension socially and economically	25	71.0	10	29.0

VI. DISCUSSION

Fishing activity is regarded as complex and dynamic which poses various vulnerable threats, but at the same time it is adaptive in nature with time. It is generally said to be a social activity which is not mostly carried out by individual persons, rather, a group or community of fishermen performs this activity whether daily, alternatively or rarely. In a way, fishes being the natural resource serves a big section of society. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap

and nutritious food. Fishing in the coastal areas of Ilocos Norte still occupies a very important place in the socio-economic development of the province. With the many organized fishing groups being assisted by the Bureau of Fisheries of the Provincial government of Ilocos Norte, all of them are positive for a sustainable fishing livelihood through proper fishing methodology.

Some fishermen claimed that there is an increasing trend of fish catch every now and then in a particular area and because of the rules and regulations being followed by these fishermen. Some says differently 'thou in another fishing community.

For seaweed, from nearly ancient times, almost all Ilocanos are accustomed to eat various species of seaweeds not only to those living near the seashore but also to those in the hinterlands. It is an alternative food for the fisher folks during turbulent weather which deter fishermen to catch fish. Seaweeds are accepted by the people as main food preparations either in fresh or dried forms. The seaweed industry in Ilocos Norte is confined to gathering, and commercial culture was just introduced to some coastal areas in Badoc and Burgos. As a local industry, it became significant means of livelihood and source of other income. Sun drying is the only post-harvest processing employed by the gatherers to extend the shelf-life of the seaweeds. Although there are agencies that are now offering post-harvest trainings and product development of seaweeds, they are not yet fully commercialized. Fresh and dried seaweeds are sold in public market in Ilocos Norte. The biggest market for dried seaweeds is in the public market of Laoag City and the balikbayans. It is their favorite take home or pasalubong when they return back to their residence abroad. All stone and shell pickers command the same price to avoid dispute in their neighborhood.

Together with an increasing demand is the increasing number of stone pickers and shell pickers relocating their homes closer to the beach to make their work easier. The whole beach becomes their workplace in the morning and their sanctuary in the afternoon. During weekends, stone and shell picking also serves as family bonding where parents and their children pick stones and shell together. Most collect stones and shell during the day and go fishing at night, especially if they did not earn enough from picking. (Northern Dispatch, Bulatlat Regions, 2008, [6][13]).

VII. CONCLUSION

The present study has shown that fishermen have limited capabilities to improve their livelihood activities, but there exist some variations where livelihood along coastal community is concerned. In seaweed gathering alone, gamet which commands a very expensive price can only be gathered in Burgos and along a part of Pagudpud. The same thing in the case of salt-making and stone picking. Salt-making is only done along coastal areas in Pasuquin, Burgos and Badoc.

Not every fishermen interviewed have the same opinion on the volume of fish catch. Problems encountered by coastal people is the decreasing volume of fish catch in and too much politicking by the community leaders especially in the fishing sector. They also feel they are being used by these leaders in soliciting goods to the local and national government.

If we measure the social and economic aspiration of the coastal population thru owning a house and lot and a permanent dwelling, then, they are there. If they are able to send all their children to school with an aspiration to finish college and become professionals, working outside of

coastal scenario, then they are there. All the respondents' priority is to give the best for their family. It is obvious with their answers on owning a house and lot and permanent dwelling and can able to send their children to school.

As we do the survey, coastal life is not a bad scene because there are alternative means for existence. Alternative source that would complement what is already a tradition because there are choices or can exist outside of the traditional means like boat-making; boat for hire (Boat for hire = 1/3 of the catch), fishing material, i.e., banniit-making, fire woods gathering and homestay.

These multiple economic occupations not only bridge the often-great seasonality in the abundance of fishery resources, but also insure against risks of failing production in any one of these activities. Moreover, these complementary pursuits may in some cases determine part of the fisheries sector dynamics. An important contribution of the sector is the employment opportunities not only in fishing but also in boatbuilding and maintenance, mechanical workshops for engines and gear, net-making and repair, handling, processing, packing and transport.

RECOMMENDATION

There are needs that were identified and necessitate to be addressed to improve the economic condition of the coastal population. Awareness campaign on how to preserve and protect the coastal resources should be initiated. This is so because during the course of the survey period, their only concern is to catch fish, gather stones and shells and does not care about the environmental degradation of these activities. It is also necessary to employ interventions which help to strengthen capacity building in coastal communities.

For the coastal populace to be responsible enough to handle their resources and to follow the rules and regulations of the fishery mandate religiously. Environmental protection should also be the concern of the fishing population since it is their source of living and income.

Trainings to improve their craft and packing should also be applied so there will be quality assurance and marketing of fish and fish products and other coastal resources and products. This will also enhance their knowledge about resource management, and to promote alternative livelihood skills to reduce dependence on living marine resources.

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