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Socio-Economic and Human Resource Capital: As Ecological Indices in the Assessment of Sustainable Livelihood in Parts of Coastal Communities of Ilaje, Ondo State

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ABSTRACT

The scenarios of livelihood for several decades in the coastal ecosystem of Ilaje in which fishing and aquaculture are the two main livelihoods have not been a sustainable one following environmental shocks, seasonality trends and chaotic economic situations. The aim of this study was evaluate the socio-economic and human resource indices of ecological alternatives for livelihood opportunities in Ilaje Coastal ecosystem. Results across communities has revealed a male gender dominated household headship, with the highest percentage (32%) age bracket of 36 to above 46 years.. The marital status had 88% marriage (Molutehin), 28% singlehood (Ikorigho) with pocket cases of divorce, widow and widowership. Educational level has 60% secondary school (Ikorigho and Molutehin), 64% tertiary education (Odonla), 8% non-formal education (Ikorigho and Awoye), and 40% illiteracy (Odun-Igo). Socio-economic had 56% fishing and 44% trading as their major primary source of alternative of livelihood income. The weekly income revealed persistent struggling among rural dwellers in effort to meet the basic needs of life. Cost of living ranged from being expensive, very expensive to being affordable. In conclusion, it becomes significant that other than fishing and aquaculture alternative livelihoods can sustainably raise the living standard of the rural dwellers among the coastal communities of Ilaje.

Keywords: *Age, sex, education, marriage, income, cost of living.*

INTRODUCTION

The scenario of livelihood in the coastal ecosystem of Ilaje in which fishing and aquaculture are the two main industries, is similar to several other coastal areas round the world. In order to provide for a sustainable way of life during the hard times, the locals in Ilaje typically turn to other alternative sources of income for wages. The entire way of life in the study area cannot be sustained and almost every activity has shocks, trends, and seasonality resulting to a chaotic economic situation [1]. Understanding the socioeconomic impact of coastal ecosystem on livelihood revolves around the attitude and interaction between communities and ecosystems, more so different levels of interaction and co-existence in the environment between the inhabitants and ecosystem has been documented [1].

The skills, resources, and pursuits necessary as a means of subsistence for livelihood is sustainable when it has the capacity to recover from shocks and stresses of any kind while maintaining or improving its capabilities and assets without jeopardising and undermining foundation of natural resources [2,3]. Sustainable livelihood is a requirments for rural development and diversification among rural dwellers in any society. In Ilaje coastal community it is predicted on the functionality of indices of livelihood assessment, involving the quality, quantity, accessibility and sometimes affordability of the key principal assets or capitals and it degree of resilience to shock or stress as bases for these assessments in Ilaje, Ondo State.

Social capital entail the structural patterns of social body involving organisations, such as community-based organizations, NGO networks, group membership, trust-based relationships, cultural and religious institutions that support or obstruct cooperative enterprise and relationships between households. These are resources that people rely on in order to make a living [4, 5]. It has been opined that social capital is a crucial resource for determining and enhancing access to other capital assets of livelihood [6].

Human capital indices are among the components of capital asset for achieving livelihood outcomes. It entails one's abilities, knowledge, and physical and mental health to pursue various forms of alternative livelihoods [4,5]. It is dependent on several indices, including: degrees of education, information, skills, knowledge, experience, health and other intangible assets that gives people the opportunity for new living, figure out solutions to their own problems, and pursue different modes of alternatives to livelihood. All these can be used to generate economic value for an individual, a family, an employer, a community, a society, or a country. It is typically a composite of four factors: education, health, occupation and population density in rural areas. The first two indicators reflect the qualitative indices of skills and health aspect of the human resource base, while the last two metrics entails quantitative indices reflecting population per unit area and the proportion of the population actually employed in the human resource base [7].

Although sustainable livelihood is often predicated on the quality, quantity, accessibility and sometimes affordability of the aforementioned capital asset indices, this present study in tandem with such condition of social and human capitals as bases for assessment of livelihood in Ilaje coastal area.

Such study was aimed at evaluating the ecological alternatives of livelihood opportunities associated with Ilaje Coastal ecosystem in light of socio-economic and human resource capitals; with the objectives: adopting various socio-economic and human resource tools for data acquisition, extrapolation and analyses, identify the various alternatives or indices of capital assets (socio-economic and human resource) held by households of the study area, assess and describe the socio-economic features of livelihood happenings of the inhabitant of the study area, identify socio-economic factors of choices for livelihood and based on these key information, data shall be generated so that later judgments can be made about the quality and structural formation of the coastal sustainable livelihood and benefits. This study is of significance hence it will provide additional information that would form the basis for further research, development, utilization and perpetuation of the ecological importance of the socio-economic and human capital assets of the area, this study shall be a potential source of science and technological tool in complimenting indigenous knowledge to improve livelihood, it shall aid in the identification of socio-economic mechanisms that support livelihood strategies, this study shall also aid in constructing frame work that allows for identification of main capitals and the interactions among the inhabitant of the study area, this study shall be a potential source of science and technological tool in complimenting indigenous knowledge to improve livelihood. It shall aid in the identification of socio-economic mechanisms that support livelihood strategies.

2.0. MATERIALS AND METHODS

2.1. Study area description

The Ilaje study area and it geographical situate and neighborhood as well as the environmental attributes (seasonal variation, climatic condition, vegetation structure and composition) have been documented [8,9]. The culture and tradition, human and natural resource endowment as well as edaphic condition have been documented [8]. The chaotic economic and livelihood standard of rural inhabitants has been revealed in Gbayisemore *et al*. [1]. The study location houses five Kingdoms: Ugbo, Mahin, Etikan, Aheri and Igbotu consisting of over 100 communities including such sampled sites as: Odonla, Ikorigho, Molutehin, Odun-Igo and Awoye.

2.2. *Field Sampling Data Collection*

A purposive sampling technique was adopted for data collection of the selected study sampled sites to determine size of respondents. This was deployed via primary sources (descriptive and explorative approach of literature review) and secondary sources (Participatory Rapid Appraisal by personal interviews / discussions, focused group discussions, and key informant interviews as well as using well-structured 20% of 125 questionnaires administered to representative population of inhabitants by simple random technique) to obtain data on socioeconomic details and human resources livelihood alternatives of respondents of the coastal ecosystem [10, 11]. The sampled sites were validated via ground-trotting using a hand-held geographic positioning system (*GPS-Garmin Dakota 10 model*) for georeferencing of exact sampled point (Table1).

Table 1. Coordinates of sampled site in parts of Ilaje coastal ecosystem, Ondo State

S/N	Lat. (N)	Long. (E)	Alt.	Community / Sampled site
Igbokoda				
1	06°08.543'	004°47.618'	17ft	Jetty
Odonla				
2	05°56.407'	004°56.768'	9	Jetty
3	05°56.391'	004°56.743'	28	Sampled site
4	05°56.387'	004°56.737'	21	Sampled site
Ikorigho				
5	05°57.042'	004°56.241'	27	Sampled site
6	05°57.035'	004°56.222'	43	Sampled site
Molutehin				
7	05°53.816'	004°59.048'	30	Jetty
8	05°53.802'	004°59.025'	15	Jetty
9	05°53.782'	004°59.034'	15	Jetty
10	05°53.817'	004°59.054'	10	Sampled site
11	05°53.743'	004°59.021'	4	Sampled site
12	05°53.743'	004°59.017'	7	Sampled site
13	05°53.774'	004°59.046'	-15	Sampled site
Odun-Igo				
14	05°53.433'	004°59.231'	7	Jetty
15	05°53.427'	004°59.226'	13	Jetty
16	05°53.404'	004°59.237'	14	Jetty
17	05°53.446'	004°59.250'	14	Jetty
18	05°53.297'	004°59.287'	-1	Sampled site
19	05°53.300'	004°59.287'	4	Sampled site
20	05°53.324'	004°59.288'	15	Sampled site
21	05°53.299'	004°53.302'	24	Sampled site
22	05°53.444'	004°53.189'	59	Sampled site
Awoye				
23	05°54.838'	004°58.766'	9	Sampled site
24	05°54.901'	004°58.737'	4	Sampled site
25	05°54.904'	004°58.693'	12	Sampled site

RESULTS

The result interpretation of study has revealed various trends of sustainable livelihood of the coastal ecosystem in light of the socio-economic characteristics and human resource capital of respondents, based on livelihood capital or asset in parts of Ilaje Coastal communities. The socio characteristic biodata of respondents among the five communities (Odonla, Ikorigho, Molutehin, Odun-Igo and Awoye) as represented in Fig. 3.1 has shown variation in the sex index. The sex index within and among the communities recorded highest percentage (%) of male than female across the respondents of respective communities. The highest percentage (76%) and least percentage (52%) of male were observed in Molutehin and Odun-Igo communities, respectively, while highest percentage (48%) and least percentage (24%) of female were recorded accordingly in Odun-Igo and Molutehin.

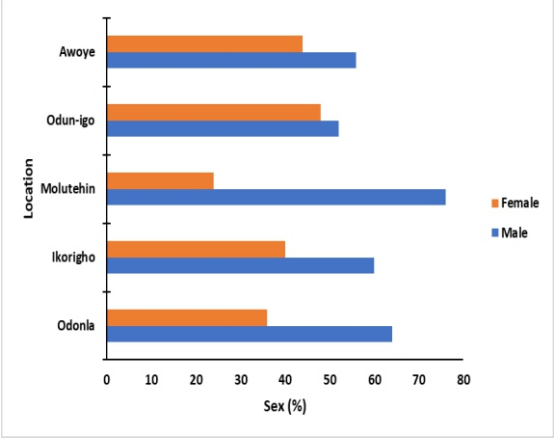

Fig. 3.1: Sex index of the studied communities

The respondents age bracket index presented in Fig. 3.2, recorded variation among the highest percentage of age bracket across the communities, with 36% Odonla and 28% Ikorigho in the range of 26-30 years. Molutehin (28%) and Awoye (32%) in age range of 36-40 years, respectively while the highest percentage (32%) of respondents was above 46years in Odun-Igo.

The marital status assessment (Fig.3.3) revealed variation among respondents across the communities with the highest percentage (88%) of marriage recorded in Molutehin and the least (56%) in Ikorigho which also recorded the highest percentage (28%) of single hood and 12% of Widowership respectively, while Odun-Igo had highest percentage (8%) of Widowship.

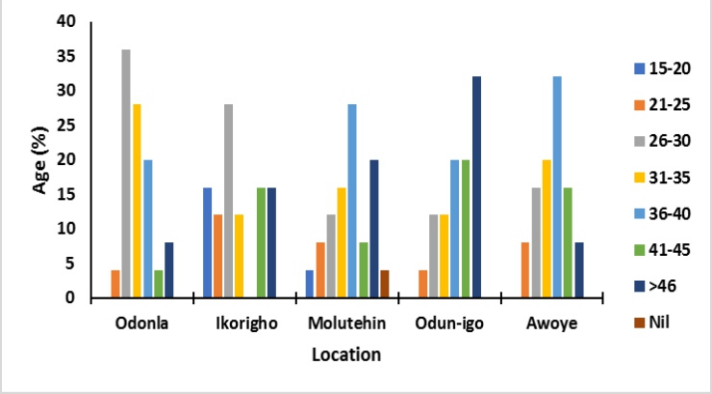

Fig.3. 2: Percentage age composition of the studied communities in Ilaje

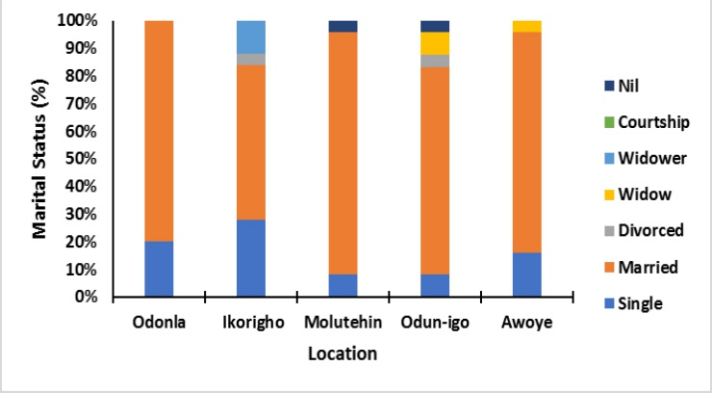

Fig. 3.3: Marital status of the studied communities in Ilaje

The education status of the respondent as exemplified in Fig. 3.4, has recorded the highest percentage (24%) of primary education in Molutehin and Awoye respectively, with least percentage (8%) recorded in Odonla and Ikorigho, respectively. Secondary education with the highest percentage (60%) was recorded in Ikorigho and Molutehin respectively while Odonla with the least (28%) recorded the highest (64%) level of tertiary education with Molutehin least (8%). Non-formal education among respondents was 4% in Ikorigho and Awoye respectively and while the highest percentage (40%) of non-education attendance of any form was recorded in Odun-Igo.

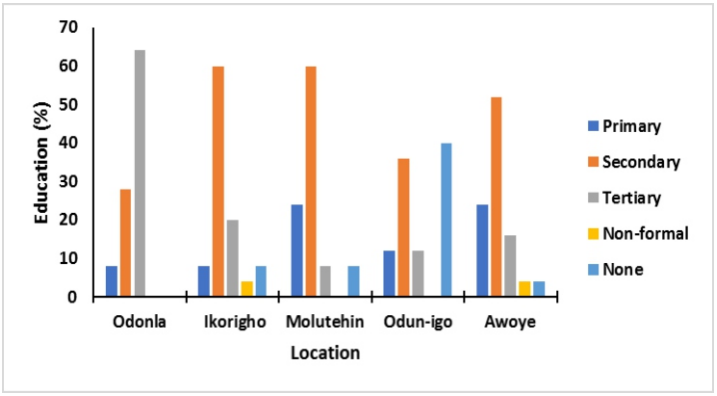

Fig. 3.4: Education levels of the studied communities in Ilaje

The income sources of respondents within and among the respective studied communities as presented in Fig. 3.5, has been recorded with trading and fishing as highest income sources to include: 44% of trading in Molutehin and Awoye, respectively; 40% in Ikorigho; 36% for Odun-Igo; and 20% in Odonla. Fishing recorded 56%, 48% and 44% respectively in Awoye, Odun-Igo and Ikorigho, and 36% and 16% respectively in Molutehin and Odonla across the communities among the various indices of income sources.

The weekly income of the inhabitant within and among the communities has recorded diverse percentage levels of income with the highest percentage (32%) of earning as N7,000 in Odonla, 8% (N20, 000) in Ikorigho, 4% (N10, 000) in Molutehin, 4% (N6, 000) in Odun-Igo and 4% (N30, 000) in Awoye (Fig.3.6).

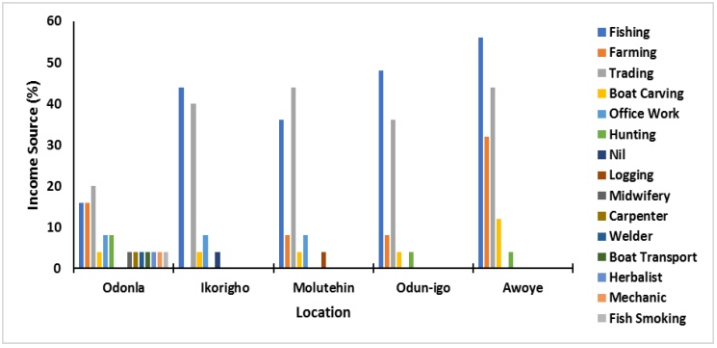

Fig. 3.5: Income sources of the studied communities in Ilaje

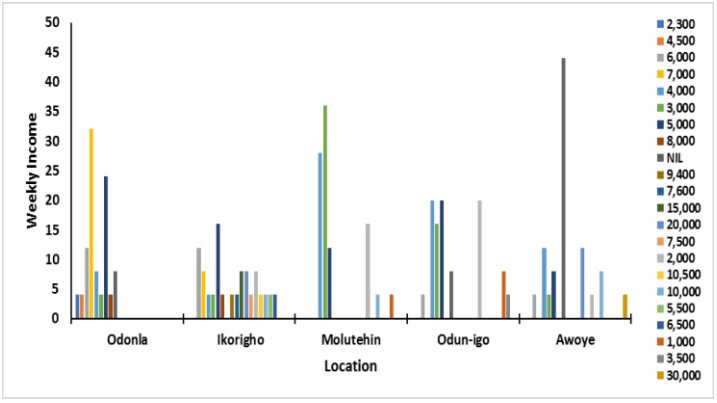

Fig. 3. 6: Weekly Income of inhabitant of the studied communities in Ilaje

The cost of living among the inhabitants of the communities as revealed by the respondent recorded an expensive cost of living by 48% in Odonla, while 76% in Ikorigho, 60% in Molutehin and 72% in Odun-Igo as very expensive, and , 44% indicated an affordable cost of living in Awoye (Fig.3.7).

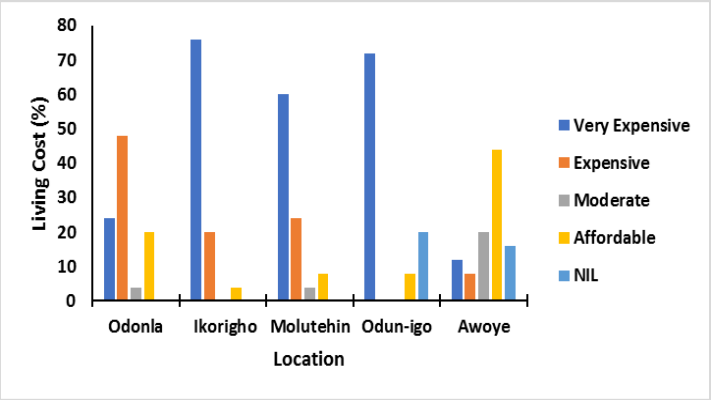

Fig. 3.7: Cost of living among inhabitant of the studied communities in Ilaje

DISCUSSION

Understanding the socioeconomic impact of coastal ecosystems revolve around the interaction between communities and ecosystems, thus different levels of attitude, interaction and co-existence between the inhabitants and ecosystem has been documented [1]. As revealed from the findings of the study there are variations in the indices of the socio characteristics assessment. The highest percentage of gender index was recorded as male across the communities and with majority of the household headship dominated by the male folks, which is in line with the culture of the studied communities. This corroborates similar findings by Edet *et al*. [10] which reported the assessment of sustainable livelihood of households in Akwa-Ibom State. In livelihood analysis gender equality is one of the key issues. Gender discrimination excludes women from the equal access needed to sustain livelihoods, increases their dependency and locks them into long-term poverty traps. Gender equality does not necessarily mean equal activities, or same treatment among men and women but signifies an aspiration in which both are able to live equally fulfilling lives [12].

Age is another index factor of livelihood activity. It has been recorded that the elderly depend on the previous system hence are neither vibrant nor more energetic to add new assets but remain as they were. The reverse is the case with middle age group that has the potential for diversification of livelihoods such as cultivation, business or other things that could improve living condition [13]. The highest percentage of gender index recorded as male than female across the communities was between 36 to above 46 years of age. This was exemplified in the various communities in their order of descending age bracket as: *Odun-Igo>Awoye=Molutehin>Odonla>Ikorigho*. This implies that the respondents used for this study were mainly elderly inhabitants of the various study communities that have being living for relatively long periods in the various communities. This corroborate Ifeanyi-Obi and Mathew-Njoku [14] who have earlier noted elderhood and maturity of age as the right sense of judgement, enough to give substantial responses to the livelihood question and with the potential for assets accumulation.

Further more it was revealed across study communities that greater percentages of the inhabitants were married than been single, divorced, widow or widower.

Such report suggests the value attached to marital union in the area. The high percentage of married people in the area indicates that most households still maintain the value system for marriage institution, as could be exemplified in: *Molutehin>Odonla=Awoye>Odun-Igo>Ikorigho* by their degree of union. Thus corroborating Edet *et al*. [10]. However, there is status of single hood order across the communities as could be exemplified by the degree of such marital status viz: *Ikorigho >Odonla>Awoye>Odun-Igo= Molutehin*. There were pocket cases of divorce, widow and widowership following natural and anthropogenic intrusions.

Education is one of the important index among the indices of sustainable livelihood assessment. At the various levels it has a positive and significant effect that stimulates impactful and sustainable dimensions as well as adaptation with climate-friendly strategies. Education level reflects the level of awareness of child literacy, access to information and the capability to improve family economic status. Report on educational level across studied communities has revealed a greater percentage of inhabitants finishing secondary school at Ikorigho and Molutehin while greater percentage also finished tertiary education in only one community (Odonla). Education has been identified as one of the indicator to livelihood sustenance in Nigeria [15]. Similar report on educational status has been reported [10,14]. Formal education has great role in alleviating household's ability to cope with livelihood sustenance. It has earlier been recorded that young people after education are not interested in agronomic activities, hence it is demanding with insignificant financial reward, but hope to get into white collard job for a sustainable livelihood capacity [13]. Following the number of years' of acquisitions of formal education by respondents, this implies increase in the productive capacity of inhabitants in terms of skill and knowledge to work and earn more income. Such increase in income and assets accumulation due to acquired knowledge has earlier been reported to be one of the bases for livelihood sustainability [10]. Further more study has shown that female literacy is an important factor in reducing poverty,enhancing healthy living and longivity families; more productive workforce; boost to industrialization and urbanization. Human capital (education, skill and health) is a significant factor in determining households' vulnerability. Low levels of education have depressing impact on economic growth [16], which can reaffirmed by the assertion that skilled households are more likely to be employable with their skills and earn more income than unskilled households [17].

Livelihood diversification is one of the most remarkable strategy for rural livelihood. It is a process of building rural households' capital in line with different activities to advance living standard [18]. Analysis of the socio-economic profile of greater percentage of the respondents of the studied communities has revealed fishing, farming and trading as major source of income among other alternative means of livelihood survival besides secondary occupational white collard job. This implies that majority of the inhabitants have alternative means of livelihood survival apart from office work. This corroborates several other studies that recorded farming and trading among others as major alternatives to livelihood activity by rural dwellers in Nigeria [19, 20, 21, 22]. It has been reported that younger people have the tendency to pursue multiple livelihood activities in rural areas of Nigeria [23, 24, 25]. The provision of alternative income-generating sources has become one of the widely used strategies at the community level to improve local

livelihoods [26] as well as improving rural household welfare and vice-versa [27].

Rural households worldwide engage in a variety of non-farm activities to generate income [28, 29, 30]. In the present scenario, diversification has become the keyword for better living and for resilient to shocks and stresses. Also diversification in livelihood is associated with adaptability to change and diverse market mechanism. Households that have diversified income sources have better welfare indicators in terms of food security, healthcare, and education among others [31]. Diversification can be measured by using activities, income and assets, thence households engage in various activities using productive assets, (land and human capital), and unproductive assets (household items and property) to generate income. Therefore, assets, activities, and income can serve as complementary indicators of diversification [32, 33].

Though agricultural activities has been the main source of income for rural livelihood in Africa, however, in line with diversification they also engage in other non-farm income-generating activities to augment their main source of income [34]. This implies that focusing on agronomic activities alone may not engender sufficiency and security of sustainable livelihoods [35, 36]; which reaffirmes the fact that diversification with non and off-farm sources of income has the potential of increasing households' total annual income and consequently food and income security [37,38, 39].

The weekly income of N1000 to N30, 000.00 naira as reported in the various studied communities is suggestive of the fact that household in these communities are still struggling to have a basic necessities of life, leaving barely below five Dollars per day as earlier reported in similar study [14], and with concomitant current inflation rate and the volatility in household income at a steady low income this will likely affect the capacity to accumulate asset of any type.

The cost of living imply a welfare living standard which has been revealed in the present study where different levels of cost of living or welfare standard were observed among inhabitants of the study communities ranging from being expensive (in Odonla), very expensive (in Ikorigho, Molutehin and Odun-Igo) to being affordable (in Awoye). This variation in the cost of living might invariably influence the capacity of the inhabitants to accumulate and have access to kind of asset in such areas of Ilaje. Several welfare indicator studies have indicated broader areas in different ways to explain cost of living to involve: financial capital as a significant determinant factor to access vulnerability of households [40]; economic determinant [41] and externality determinants and institutional credit [42, 43]; poverty alleviation [44, 45]; food consumption [46, 47] and access to basic services (involving electricity, water, sewage facilities, clothing, housing, medicine and education [48]. Besides the availability of credit facilities by government and non-governmental organizations,and the distributive structures of welfare, health care and relief are all welfare indicators that play important role in households' recovery from poor living standards,[49, 50]

CONCLUSION

The Ilaje coastal ecosystem offer tremendous values and benefits which contribute significantly to the household livelihood of the rural economy; thereby encouraging continuous implementation of sustainable livelihood programmes. Generally the Ilaje coastal communities depend on the ecosystem for either their own consumption or the sale of such resources for money as source of income for their livelihood. Using the Participatory Rapid Appraisal (PRA) approach the study has revealed diverse trend of socio-economic scenarios and human resource capital in light of assets composition among the studied coastal communities as well as some levels of interaction between the inhabitants and capital assets of the coastal ecosystem. Imbalance between the two capitals or assets for coastal communities of Ilaje was revealed with the human capital having education as the least index of acquired indices among farming households in the area. On this premise the following submissions are imperative: Support for alternative livelihoods than fishing and aquaculture can raise the socio-economic status of the rural dwellers. Establishment of small and medium industries, especially agro-based industries in the rural area as to create opportunities to participate in alternative sources of livelihood. Eco-tourism can be a very good opportunity for engaging the people in hospitality, business and promotion of other traditional and modern craftsmanship. By improving their participation in social activities such as religious groups, farmer's organizations, cooperatives etc., this will build membership and trust and selfless team spirit to proffer solutions to each others' problems and as well share knowledge skills and ideas. Increasing human assets by educating the younger members of the households will enable improvement of their knowledge and skills and the capability to work and produce financial asset and other assets that will enhance sustainable livelihood outcomes. With these aforementioned recommendations it becomes significant that sustainable livelihood among coastal communities of Ilaje will help reduce poverty, crimes; militancy, terrorism and reduce over dependency on government among others.

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CONFLICT OF INTEREST

This Authors declares no conflict of interest neither within nor outside the authorship of this paper

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