

Contributions of Community Based Natural Resources in Socio-Economic Development of Indigenous Coastal Dwellers in Odukpani, Cross River State, Nigeria

Abraham C.M¹, Ansa I¹, Jimmy U.J^{1*}, Osogi M.A¹, Udoh I.J¹, Idika C.K¹, Imoh I.J¹

¹Department of Geography and Natural Resources Management, University of Uyo, Uyo

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*Corresponding author: Jimmy U.J

Department of Geography and Natural Resources Management, University of Uyo, Uyo

Abstract

The study examined the contribution of community based natural resources on the socio-economic development of indigenous coastal dwellers in Odukpani LGA, Cross River State. Four hundred copies of questionnaires were administered to the indigenous coastal dwellers including farmers, hunting, fishing and many others. A total of eleven (11) villages naturally endowed with resources were sampled. Adequate consultation with community stakeholders was carried out so as to fully incorporate their opinion into the study. The various community based resources found were sand aggregate, fisheries, wildlife, forest and swamp cultivation. The factors influencing the exploitation of community based resources were not limited to community institutions, poor technology/capital and land tenure. Chisquare was used in testing hypothesis. The result produces Pearson Chi-Square value of 207.162^a, and a P-value (2-sided) of 0.000, with implication that, natural resources availability contributed less on the development of Odukpani LGA, Cross River State. Further result produces Pearson Chi-Square value of 219.100^a, degree of freedom (df) of 12 and a P-value (2-sided) of 0.000, revealing that community based resource exploitation does not contribute significantly to household income for indigene of Odukpani. During interactive session, it was revealed that resources control is basically in the hands of few and similarly, management practices tends to contradict the principles of sustainable development. Suggestions such as setting up of committees on indigenous people's rights and development, self-help development, increased political participation and effective implementation of government policy on financial autonomy at grass root level were raised for a transformative community development.

Keywords: Community Based Natural Resources, Socio-Economic Development, Indigenous Coastal Dwellers, Cross River State, Nigeria.

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INTRODUCTION

Community based natural resource management (CBNRM) has been found to hold different meanings to different people depending on geographical scope, socio-political context and bio-physical nature (Zyambo, 2020; Bugembe, 2016). It is generally assumed that worldwide failure of centralised approaches to managing natural resources led to the search for a viable, alternative but sustainable approach for management of community-based resources (Maureen, 2021). The approach whereby local communities are given ownership rights to manage natural resources became common in the 1960s when it was named community-based natural resource management (CBNRM). CBNRM is an institutional arrangement that is people-centric and participatory.

From the perspective by Songorwa (2021), CBNRM aimed to create natural conditions under which most members of the community stand a chance to benefit from management of resources harnessed from their backyard including wildlife, forestry, fisheries and solid minerals. This brought about the bottom-up participatory approach with principles recognising local ownership and full participation (Kellert *et al.*, 2020). These principles are practiced regardless of gender and encompasses the legitimisation of local resources and property rights. There is willingness to embrace traditional values and traditional knowledge in the management of resources and a need to collaborate with other stakeholder for optimum economic growth (Kellert *et al.*, 2020).

Also, CBNRM attempts to integrate the goals of conservation, sustainable development and full community participation (Abubakar *et al.*, 2021; Mbaiwa, 2015). This is performed by applying Ostrom's 1990 design principles on governing the common elements concerning empowerment, public participation, equity, conflict resolution mechanisms, congruence between appropriation and provision of rules for local conditions, effective monitoring, collective choice arrangements and sanctioning activities for the use of common resources (Ostrom 1977). Ostrom design principles were based on extensive studies of long-enduring governing institutions of common-pool resource management across different systems such as wildlife, fisheries, and forests (Ostrom 1977, 1986a, 1987, 1990, 1992, 1993, 1996; Agrawal, 1994). The eight designed principles that were identified by Ostrom (1990) included opportunities for collective choice and local self-determination, approaches to monitoring, congruence with local conditions, sanctions, and conflict resolution. It included the incorporation of multiple, nested layers of organisation, shows the best practices, and describes the rules and structures of robust institutions associated with the sustainable governance of common pool resources.

The indigenous people is therefore entitled to earn some benefits from exploitation of earth's resources. Institutional framework particularly Land use Act legally recognises the proprietorship of land by land owners. The principle of CBNRM entails that authority over land needs to be decentralised, and that empowerment of people at grassroots level be strengthened (Milupi, *et al.*, 2017). In this wise, for CBNRM initiatives to be successful, there must be cooperation between the government, the private sector and other actors (Munalula, *et al.*, 2020). Examples of areas in which initiatives of CBNRM could be practised, are forests, open woodland or grasslands for livestock grazing, wood supply, medicines, farm land, wildlife for game meat and safari incomes, fish in freshwater lakes, and aquifers, tanks and irrigation channels for domestic and livestock water supply and irrigation.

The post-independence history of Africa has some elements of CBNRM initiatives. A typical illustration is the Botswana Okavango Delta management system. Findings confirm that community-based natural resource management record successes of improved livelihoods and nature conservation after independence in the Okavango area (Mbaiwa & Stronza, 2021). A similar programme was implemented in Zimbabwe, widely known as the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE). The programme was designed in a way that used wildlife and other resources to promote decentralised, rural, institutional control and

management of livelihoods (Mbaiwa & Stronza, 2021). The basis of the formation of CAMPFIRE was to ensure decentralisation of rights and access to benefits from community natural resources among the indigenous people of Zimbabwe. Samuel (2019) further hinted that CAMPFIRE programme subsequently sought to promote conservation and at the same time protect livelihood from the exploitation of wildlife, forests, grassland and water.

While CBNRM has been widely used in several policy making, some organisations preferred "Top down resource management" and critiques have identified the weakness of this approach for having placed the indigenous people at the backdoor of development for many decades (Jimmy, 2016). A great number of solid and liquid minerals producing communities in Nigeria cannot grow beyond where they were fifty years ago. The reasons are that top down management is anti-development and equally, natural resource proceeds are flowing to the central treasury, leaving the local economy dry.

A lot of studies has discussed on the necessity of indigenous people's right on natural resource management (Alchian *et al.*, 1973; Anderson, 1991; Anderson, 1992; Anderson, *et al.*, 1975; Bromley, 1991a).

In South Africa, the post-apartheid era has seen the establishment of new policies that emphasised citizen participation in natural resource management (Sibonokuhle, 2020). During apartheid, indigenous communities had no voice neither a quota in the abundant resources. Gold exploited for centuries in Witwatersand and other minerals could have transform the indigenes economically, but the management practice was unfavourable. Today, the country is a signatory to numerous international environmental agreements that are supportive of community-based approaches. Some of the successful initiatives in the country include the 'transform programme' in Malamulele, Blyde River and Richtersveld, whose aim is to assist rural people in making use of their natural resources in a way that brings about tangible economic benefits (Department of Environmental Affairs and Tourism (DEAT). The Makuya Nature Reserve is another example of the CBNRM model where all decisions are discussed and agreed on by an established resource management groups: the provincial government, Limpopo Tourism and Parks (LTP), the local community and South African National Parks (SANParks).

The 20th century sparked up advocacy for a suitable natural resource management model that respect equity, indigenous people's right, non-exploitative, mutual gaining and losing as well as regards for posterity. Still on this premise, Jimmy

(2016) reiterated that management of resources within the jurisdiction of an organized community setting is the future of resource management. Among the numerous contributors to the advancement of Community based natural resource management are Hardin (1968), Ostrom *et al.*, (1999), Ostrom (1993), Ostrom and Elinor (1997b), Ostrom & Walker (1991), Ostrom, Gardner, Walker & James (2000), Gardner *et al.*, (1990), Gardner *et al.*, (1991), Agrawal (1994) and many others. There were voices that spark global revolution in natural resource management. From their revolutionary ideas, a new breed of natural resources philosophers have been birthed across the world, with key objective of intermediating between the voiceless indigenous people and forceful state actors.

Community-Based Resource Management being a bottom-up approach tends to bridge developmental barriers and foster opening of opportunities (Jimmy, 2016). It enhances the conservation of natural resources, economic development of rural environment and protection of natural environment (Wambugu *et al.*, 2017). The degree of positive impact on the community's overall welfare depends on the realization of these opportunities and struggle to push away the barriers. In view of the aforementioned, the host communities will take the responsibilities to developing their natural resources through active participation in resource planning, favourable negotiation and opposing agreements, policies and programmes that have some dubious elements. Knowing what to say, how to say it and when it should be said would leverage them the opportunity to raise their standard of living and as well preserve their heritage. This is one of the most outstanding inner strength of a functional community. It is based on these premise, that livelihoods are positively impacted.

In addition to the practical problem-solving utility of this perspective, it builds a strong sense of community and a foundation of growth for future generation (Wanje *et al.*, 2017). Community-initiated environmental resources management embodies the notion that a community can achieve greater results even within the constraints imposed by the larger political economy in which it is embedded. In community development practice, it is rudimentary that the solution to community problems is sought first within the community and its resources and capabilities, before external support can be sought subsequently (Jimmy, 2016). Hence, community stakeholders can better mobilise existing skills, address problems, work cooperatively and use community assets at their disposal in ensuring that members of the community enjoys a minimum comfort and improved standard of living through effective utilization of resources.

In Odukpani LGA where there are numerous resources including granite, solid minerals, fisheries, wildlife, timber and non-timber products, socio-economic development is inadequate in such a manner that a greater segment of households found it difficult to access better housing, water, road, WASH services and other social welfare. All across the adjoining region including Akamkpa, there are numerous licenced granite crushing companies operating in the region for many decades yet, the level of infrastructural and human development is retrogressive. Udofia (2019) has made similar observation in his study in Itu LGA, Akwa Ibom State, whereby the level of resource abundance does not commensurate with the economic reality of the region and thus community wallows in poverty. This study raises question as to why resource rich regions are economically backward and as to what management approach (es) can turn around the socio-economic landscape of the naturally endowed region of Cross River State, Nigeria. The objective seeks to: Carry out inventory of community based natural resources in Odukpani LGA, Cross River State, assess the factors influencing the exploitation of community based natural resources in the study area, assess the Impact of community based natural resources on the economic development of Odukpani LGA, Cross River State and to develop suitable strategies for sustainable community based natural resources management.

MATERIALS AND METHODS

Materials

Odukpani Local Government Area is one of the many Local Government Area that make up Cross River State. It is an Efik town located between Longitudes 8° 20' 59" N and Latitudes 5° 4' 46" N. The study area has different terrain; the coastal plain, wetlands, forest reserves, long stretch of hills. The Local Government Area is bounded by Biase Local Government Area in the North, Atlantic Ocean in the South and Calabar Municipal Area in the East. The settlement in the region are Akpap Okoyong, Creek Town, Okurikang, Inuakpa. Eki, Eniong, Abatim, Ito, Idere and Ukwia Ibom. According to the 2006 census, Cross Rivers State interestingly had a population of 3,737,517 with Odukpani Local Government Area's population up to 197410 with an annual growth rate of 5.65%.

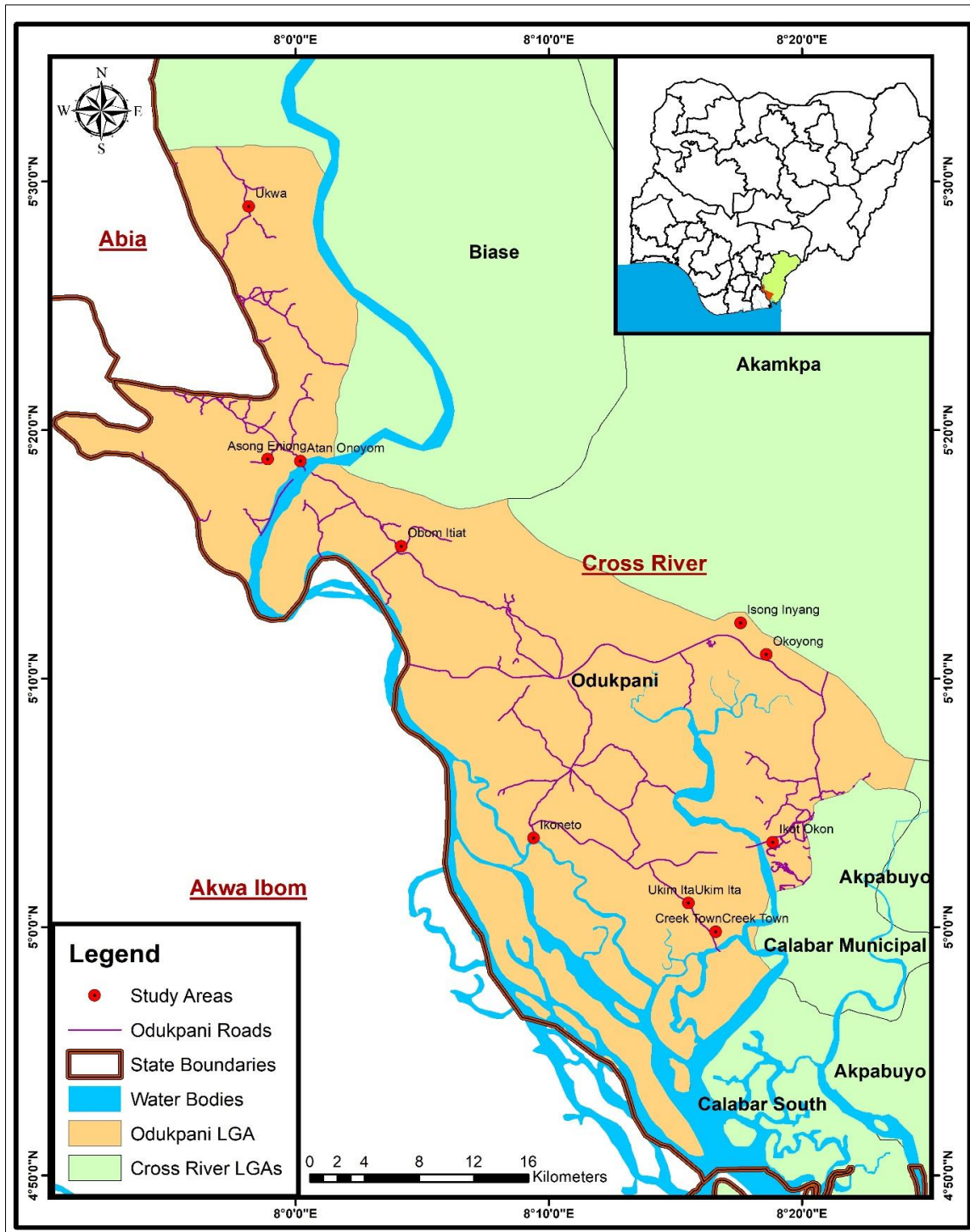
Odukpani Local Government Area enjoys a 'tropical climate' affected by a portmanteau factor which includes its nearness to the high sea and the presence of rainforest. During most months of the year, there is significant rainfall in the region with only a short and fairly intense dry season. The geological succession in this territory reflects the progressive growth of the delta into the Gulf of Guinea and consists primarily of shales, sandstones, sands, and clays. These materials actually do not only characterize the development of the region's southern sedimentary basin

but of the entire state. This Tropical nature thus, is indeed an ideal and important climatological characteristic of the region.

The region of Odukpani Local Government Area enjoys a subtropical vegetative zone with features of lush vegetation and trees affected by several factors. Odukpani Local Government Area has a mixed vegetation, but the two prominent types are the swamp forest and rainforest. The study area has the forest/farmland mosaic and secondary forest. The

swamp forest is the most extensive of the vegetation in Cross River State.

Generally, Cross River State has an uneven terrain with some places having flat terrain while physical relief with creeks, valleys and swamps are found in most areas certainly because of the influence of the Cross River. In Odukpani Local Government Area, the terrain is both flat and elevated with ravines adorning a few areas.



Methods

For this study, both empirical and descriptive method were adopted. The data so collected was analyzed quantitatively and descriptively. The population under study comprise of the number of persons living within Odukpani LGA, an agrarian society. They were arable crop farmers, hunters, firewood gatherers, palm wine tappers, fishermen, wetland rice farmers, plantation farmers, sand miners, timber and non-timber dealers. In the study, a total of eleven (11) villages were purposively sampled including Ikoneto, Ukwa, Atan Onoyom, Creek Town, Ukim Ita, Banda, Ikot Okon, Okoyong, Isong Inyang, Asang Eniong and Obom Itiat. The reason for selection of these communities was basically based on natural resource endowment particularly liquid and solid

minerals, fisheries, forest and wildlife, wetlands and fertile soils.

Random Sampling technique was used to select households for the study. The sample size was using determined Taro Yamane method. Questionnaires were administered to the respondents and a total of three hundred and ninety nine (399) copies was obtained, though it was approximated to a round number-four hundred (400). Statistical Package for Social Sciences (IBM SPSS Statistics 25) version was employed for data analysis.

RESULTS AND DISCUSSIONS

Table 4.1: Sex Composition of Respondents

Sex	Frequency	Percentage (%)
Male	190	47.5
Female	210	52.5
Total	400	100
Marital status	Frequency	Percentage (%)
Single	150	37.5
Married	183	45.75
Divorced	40	10
Widowed	27	6.7
Total	400	100
Age	Frequency	Percentage (%)
18-25	110	27.5
26-33	100	25
34-41	60	15
42-49	90	22.5
50 and above	40	10
Total	400	100
Educational Qualification	Frequency	Percentage (%)
B.Sc	15	3.7
SSCE	157	39.3
FLSC	168	42
Non-formal	60	15
Total	400	100
Occupation	Frequency	Percentage (%)
firewood gatherers	50	12.5
Farmers	100	25
palm wine tappers	50	12.5
Artisan	50	12.5
Fishing	70	18.75
Traders	50	12.5
wetland rice farmers	30	7.5
Total	400	100
Income	Frequency	Percentage (%)
10,000-20,000	140	35
21,000-30,000	150	37.5
31,000-40,000	50	12.5
Above 40,000	60	15
Total	400	100

Source: Researcher's Field work, 2025

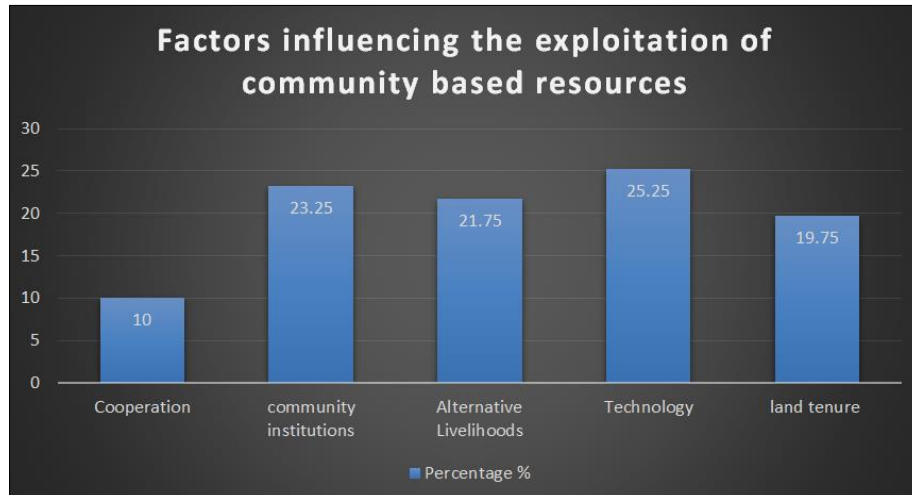


Figure 1: Factors influencing the exploitation of community based resources
Source: Researcher's Field work, 2025

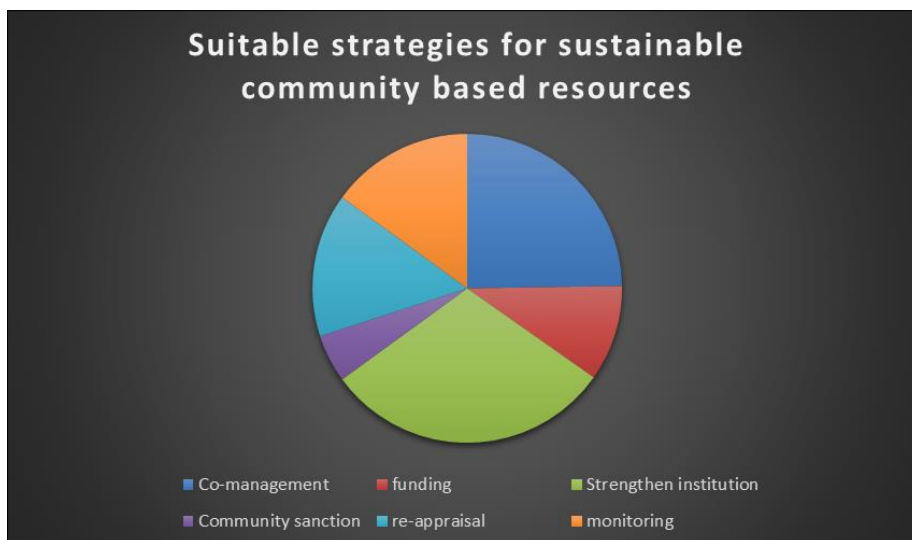


Figure 2: Suitable strategies for sustainable community based resources
Source: Researcher's Field work, 2025

Testing of Hypothesis One

Chi-square was used to test for the impact of Natural resource availability on the development of Odukpani LGA using SPSS.

Summary of Chi-Square Tests

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	207.162 ^a	12	.000
Likelihood Ratio	201.218	12	.000
Linear-by-Linear Association	61.409	1	.001
N of Valid Cases	14133		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 35.07.			

From this table, the result produces Pearson Chi-Square value of 207.162^a, degree of freedom (df) of 12 and a P-value (2-sided) of 0.000, and this concluded that there is significant impact of Natural resource

availability on the economic development of Odukpani LGA.

Hypothesis Two:

Summary of Chi-Square Tests

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	219.100 ^a	12	.000
Likelihood Ratio	201.620	12	.000
Linear-by-Linear Association	71.760	1	.001
N of Valid Cases	16981		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 35.07.			

The table shown that Pearson Chi-Square value of 219.100^a, degree of freedom (df) of 12 and a P-value (2-sided) of 0.000, and can be concluded that community based resource exploitation does not contribute significantly to indigenous people's income in Odukpani LGA.

Discussion of Findings

Various findings were obtained from the study. One of such findings was that the distribution of community based resources LGA are massively found in the study area, mainly fisheries, fertile soil, forest,

sand aggregates and many others. A total of 60 respondents (15.0%) admitted that sand aggregate as a community based resource is massively found in their domain. 86 respondents (21.5%) admitted that fishing/fish trading is a common informal activity, 95 respondents (23.75%) stated that wildlife is enormous in their natural habitat, 61 respondents (15.25%) were of opinion that a lot of forests are still in existence and whereas, 98 respondents (24.5%) derived their livelihood from swamp cultivation. A lot of people depend on these resources for their livelihood (see feature 1-3).



Feature 1: Fuelwood collected from community forest



Feature 2: Community Sacred Stream



Feature 3: Livelihood from community-based resource

It was further revealed that many factors are responsible for the exploitation of community based resources and these factors seemed to limit access and in some cases causes abuse of natural resources. From the findings made, 40 respondents (10%) were of opinion that the level of cooperation influences the exploitation of community based resources, 93 respondents (23.25%) agreed on community institutions, 87 respondents (21.75%) agreed on alternative livelihoods, 101 respondents (22.25%) agreed on poor technology/capital, whereas, 79 respondents (19.75%) were of opinion that land tenure were is one of the factors affecting community based resources in Odukpani LGA.

The study also realised that exploitation of community based resources contribute to the economic development of communities, though at different rate of impact. 130 respondents (32.5%) agreed that household consumption is one of the impact derived from community based resources in Odukpani LGA, 50 (12.50%) on job creation, 35 (12.5%) on investment, revenue on 50(12.50%), savings on 85 (19.25%), living standard on 25(6.25%) and healthy consumption with 25(6.25%). From personal observation during reconnaissance study and interview, the abundance of natural resources in the region did not translate into economic transformation of the inhabitants. The region is blessed with oil and gas, granite, sand aggregates, fisheries, forest, assorted solid minerals and plantation. There seemed to be no clear cut development plan for the region and that contributed to the widespread poverty, infrastructural deficiency and economic backwardness. From the field observation, this area is one of the most developed part of Cross River State. This corroborate with findings from Udofia (2019) that resource endowed regions struggles over development due to elitist influence on resource control. In his study, Itu LGA is highly endowed with resources cutting across forest and wildlife, wetlands, island, rivers, solid minerals, oil and gas, upland soils and plains. Coincidentally, Itu LGA in Akwa Ibom State and

Odukpani LGA in Cross River State share similar border, similar water bodies and similar resource management problems.

CONCLUSION AND RECOMMENDATIONS

Economic development of indigenous communities is gaining much momentum in 21st century. It is a complex but a popular subject matter in environment and development forum globally. Community based resources cannot be developed without indigenous people's participation, as such people need to be empowered so as to enforce the kind of development they dream to see. In the study, cultural and socio-economic factors among others were identified as a challenge to community development. Odukpani Local Government Area is yet to be positively transformed via community based resources because of inadequate social amenities and low commitment of state actors. In other word, the indigenous communities need sufficient infrastructural facilities so as to attract investor particularly in the solid mineral industry, forestry, tourism and fisheries. Based on findings of this study, the following recommendations are made:

- Political representatives of indigenous communities should bring democracy down to the grassroot to engage and empower the struggled communities.
- Indigenous communities in Odukpani LGA likewise other regions facing similar plight should hold their political leaders responsible for their economic and infrastructural backwardness. The emergence of local government financial autonomy should bring about a change of narrative in Odukpani. Excuses that centralised financial autonomy hinders the development of indigenous communities in Nigeria.
- Communities that are embarking on self-help projects should be encouraged by ways of financial and technical assistance from the government.

- Community stakeholders can better mobilise existing skills, address problems, work cooperatively and use community assets at their disposal in ensuring that members of the community enjoys a minimum comfort. Before this can be done, major steps to be taken would involve identifying existing problems, brainstorming and exploration of solutions, engagement and mobilisation, prioritisation, planning and action. It is on this note that community leaders in Odukpani should mobilise resources, set up committee for indigenous human development and seek options that can totally transform the people and the community.
- Empowerment through soft skill, advanced technical skills, scholarship and political appointment should be encouraged in Odukpani LGA.
- Effective infrastructural development is essential as well as maintenance of the existing ones to discourage the people from migrating completely out of their community.
- Natural resources should be harnessed for common goods and the proceed should be channeled into developing the rural communities

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