



# Rural poor, natural resources management and sustainable livelihood in Delta State, Nigeria

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## ABSTRACT

Livelihoods in the greater part of Delta State area rural villages are constantly exposed to the impact from environmental pollution causing a great loss in both flora and fauna – a major source of livelihoods based on the indigenous people – farming and fishing practices – which has been lost due to environmental degradation. The environment is important to people living in poverty in Delta State villages not only because their existence to a large extent relies on subsistence endeavours, which depend on natural resources, but also because they perceive their well-being as tied to their environment in terms of livelihoods, health, vulnerability and the ability to control their lives. Poorer people are more vulnerable to changes in the environment, in part because social, political and economic exclusion means they almost always have fewer choices about where they live. They bear the brunt of natural hazards, biodiversity loss and the depletion of forests, pollution (air, water and soil). Two communities were selected from each of the senatorial districts which were divided into clusters and 10 persons from each cluster were examined. These were farmers with ages ranging from 50 years and above. These include heads of communities, community chiefs, the spokesmen, elders and other opinion leaders. In each cluster, the starting point was a purposive sampling technique, involving the targeting of individuals that suits the subject and nature of the study using predetermined selection criterion randomly selected and beginning from there, the nearest door rule (that is, the first house, whose door is nearest to the door of the current house) was used for locating the subjects. It was revealed that Poverty breeds criminality and it also leads to over-exploitation of environmental resources which culminated in environmental degradation. These then brought about food insecurity and general insecurity in the study area.

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## INTRODUCTION

The people of Delta State engage in a wide range of economic activities. These include farming, fishing, and hunting, tapping of rubber and raffia palm, mining, trading and manufacturing. One of the major industrial activities in the state is prospecting for mineral resources. These resources include petroleum, lignite, coal, alluvium, silica, limestone and clay.

Basically, there are two types of natural resources; renewable and non-renewable. Renewable resources include living resources such as phytoplankton and

higher plants with animal life sustained by these (Dublin et al., 1992). The non-renewable resources include crude oil and gas, solid minerals, salts, sand and gravel, etc. The most important natural resources of the Niger Delta are its deposits of crude oil and gas on which the whole country depends for her energy sources and foreign exchange (Odiere, 1999). Nigeria is also blessed with various animals and plants species. Human populations are increasing at an alarming rate. This has a direct effect on the environmental resources. Land degradation has

remained an important global issue because of its adverse impact on agronomic productivity, the environment, and its effect on food security and the quality of life.

There is increasing rate of degradation spread all over Nigeria ranging from sand dredging, soil depletion, forest depletion, desertification, and erosion of various degrees across the nation. This has brought a major concern as food and water security is now the order of the day. The earth's natural resources are air, water, soil, animals and plants. There is interdependence and balance between them. Through human activities, this harmony tends to be upset. Population explosion, lack of concern for the environment, urbanization, poor land use management, municipal and industrial wastes etc. have resulted in overgrazing, overfishing, overhunting, deforestation, destruction of aquatic habitats, bad agricultural practices, all of which have combined to deplete the earth resources, degrade the environment and cause loss of biodiversity.

Poor people in developing countries are particularly dependent on natural resources and ecosystem services for their livelihoods. The poor largely depend on the available resources to survive. This they do without concern for the environment. A large number of the poor lives in areas of high ecological vulnerability and relatively low levels of resource productivity.

The gap this study tends to fill is to provide an analysis of recent changes with relation to the utilization of environmental resources and access to these resources has caused the environment. In this study, the environmental consequences of over-exploitation of available resources as a result of human activities have been outlined with a view to discourage unsustainable agricultural practices in the region and to review limitations to continuation of the current agricultural practices in Delta State.

### **The sustainable livelihoods approach**

The Sustainable Livelihood Approach (SLA) to development intervention has been in vogue since the late 1990s and formed a central concept of the UK's Department for International Development's (DFID) strategy (DFID, 1997). The emphasis on sustainable livelihoods was set out in the 1997 White Paper on international development as follows: *"...refocus our international development efforts on the elimination of poverty and encouragement of economic growth which benefits the poor. We will do this through support for international sustainable development targets and policies that create sustainable livelihoods for poor people, promote human development and conserve the environment"* DFID (1997).

The concept of "livelihoods" has become increasingly

popular in development thinking as a way of conceptualizing the economic activities poor people undertake in their totalities. The focus of development thinking in the 1970s on employment and "jobs" has given way to the realization that while job creation in the formal sector continues to be one important strategy for poverty reduction, the reality for poor people in the southern region is that survival and prosperity depends on the pursuit of diverse and multiple activities simultaneously by different family members, taking advantage of different opportunities and resources at different times.

As Chambers wrote in 1997: *They maintain a portfolio of activities. Different members of the family seek and find different sources of food, fuel, animal fodder, cash and support in different ways in different places at different times of the year. Their living is improvised and sustained through their livelihood capabilities, through tangible assets in the form of stores and resources, and through intangible assets in the form of claims and access* (Chambers 1997: 163).

Before the publication of the White Paper, Carney (1998) provides a simpler vision but also one which has resonance with that of Chambers and Conway: *"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living"* and when merged with sustainability *"A livelihood is 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, not undermining the natural resource base"* (Stephen et al., 2009).

In order to recognizing these activities using livelihoods approaches requires an attempt to understand the processes that underlie poverty, and the social, cultural, political and institutional contexts in which poor people live. Although the individual, household and community are the primary levels of analysis, livelihoods approaches seek out the relevant interactions at micro, intermediate and macro levels. Hebinck and Bourdillon (2002) point out the different ways in which a livelihoods framework is used in the field of development:

- For policy makers: 'Livelihood' provides a framework that focuses on poverty within the contexts of the people who are poor, and on the processes that underlie poverty.
- People-centred: The focus here is on what matters to people.
- Holistic: identify constraints and opportunities regardless of the sector, geographical space or level at which they occur.
- Responsive and participatory: In SL, 'poor people themselves must be key actors'. The SL approach draws heavily on lessons from participatory development, and natural resource management issues have been

approached through a participatory perspective.

- Multi-level: 'the micro-level informs the development of policy' and 'macro-level structures and processes support people'. The framework can be used for analysis at different scales and, in turn, it may highlight some key dilemmas and trade-offs that calls for debate and restructuring.
- Conducted in partnership: 'with both the public and the private sector'.
- Sustainable: 'economic, institutional, social and environmental sustainability'.
- Dynamic: 'recognize dynamic nature of livelihood strategies, respond flexibly and develop long-term commitments'.

As points out by Farrington (2001: 1) 'part of the value of the SL approach therefore lies in providing an inclusive and non-threatening process by which the capacity of development specialists to think beyond conventional sectoral or disciplinary boundaries can be enhanced'.

SLA is not a new paradigm but a collection of best practice principles. This point is worth repeating for two reasons. First, it is important to give due recognition to other development approaches that have contributed to the development of these best practice principles. As Conway et al. (2002:1) identify, the entitlements approach, the urban asset vulnerability framework and survival strategy frameworks can all be said to fall within the 'livelihoods' approach, in that they share the same broad features. It is important therefore to bear these other approaches in mind and to consider that the SLA may need to further draw on these approaches in order to achieve both its analytical and practical objectives.

Secondly, the value of the SLA is precisely that it incorporates lessons from other approaches in a framework that combines analysis and practice. Since the ideas are not necessarily new the approach has 'come of age' in a receptive policy environment and has been championed through development organizations. The framework is more practically focused than previous livelihoods approaches and more cross-sectoral than approaches such as farming systems.

The effectiveness of the SLA as a tool for developing strategies is less established than the SLA as a diagnostic tool. A key concern in the development of country level development strategies has been how to integrate poverty and environmental policies into coherent growth-oriented macro-economic frameworks. In many ways SLA as a framework for developing strategies complements what has been termed the 'new architecture of aid' (Farrington, 2001). Farrington went further to say that SLA as an approach and the new architecture and as the means of organizational delivery, constitute a concerted policy focus on 'mainstreaming' poverty and the environment. SLA at the planning level has been important for identifying entry-points into

projects and ensuring a livelihoods focus even in sectoral natural resource projects. The analogy of an 'acupuncture approach' has been used in this connection: holistic diagnosis of the problem but the treatment is specific and focused (Ashley and Carney, 1999).

Establishing indicators of outcomes requires a precise answer to the question: what is a sustainable livelihood? The term 'sustainable livelihoods' relates to a wide set of issues which encompass much of the broader debate about the relationships between poverty and environment. As Carswell et al. (1997: 10) point out, - "definitions of sustainable livelihoods are often unclear, inconsistent and relatively narrow. Without clarification, there is a risk of simply adding to a conceptual muddle..."

Drawing on Chambers and Conway (1992) among others, the IDS team's definition is as follows:

A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with, and recover from stresses and shocks, maintain or enhance its capabilities and assets, not undermining the natural resource base.

Five key elements of the definition can be recognized, each relating to a wider literature with, in some cases, established ways of assessing outcomes. The first three focus on livelihoods, linking concerns over work and employment with poverty reduction with broader issues of adequacy, security, well-being and capability. The last two elements add the sustainability dimension, looking, in turn, at the resilience of livelihoods and the natural resource base on which, in part, they depend (ibid).

Thus SLA can be considered in a number of different ways (Farrington, 2001):

1. A set of principles guiding development interventions (whether community-led or otherwise). The fundamental issue here is the notion that an intervention has to be evidence-based rather than instigated in top-down fashion without adequate knowledge of the community.
2. An analytical framework to help understand what "is" and what can be done. Thus the logic as set out here is to appreciate the capitals which are present, their vulnerability and the involvement of institutions. The logic provides a framework which can serve as the basis for an analysis.
3. An overall developmental objective – In this case development is the improvement of livelihood sustainability, perhaps by making capital less vulnerable or by enhancing the contributions that some capitals can make or even by improving the institutional context.

It is these three—a set of principles, an analytical framework and an objective—which help explain the popularity of SLA. However like all initiatives in post-Second World War development SLA did not come out of a vacuum but from the evolution of a number of older

trends and ideas. There are echoes here of an influence from the UNDP's Human Development approach, which itself was influenced by the work of economist Amartya Sen and his writing on capability (Sen, 1984). Indeed "human development" took as central tenant the importance of enhancing capability: *"Human development is a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. If these essential choices are not available, many other opportunities remain inaccessible"* UNDP HDR (1990: 10).

These choices can be achieved by widening the capital base, for example, by education. There are also nods in the direction of sustainable development albeit with an unambiguous focus on people: *"the development process should meet the needs of the present generation without compromising the options of future generations. However, the concept of sustainable development is much broader than the protection of natural resources and the physical environment. It includes the protection of human lives in the future. After all, it is people, not trees, whose future options need to be protected."* UNDP HDR (1990: 61-62).

Comparing the above from the Human Development Reports to that of SLA as envisaged by DFID: *The livelihoods approach puts people at the centre of development. People rather than the resources they use or the governments that serve them—are the priority concern. Adhering to this principle may well translate into providing support to resource management or good governance (Stephen et al., 2009). But it is the underlying motivation of supporting people's livelihoods that should determine the shape of the support and provide the basis for evaluating its success* ([www.nssd.net/references/SustLiveli/DFIDApproach.htm](http://www.nssd.net/references/SustLiveli/DFIDApproach.htm), accessed September 2009).

However, the phrase *"it is people, not trees, whose future options need to be protected"* in the HDR (1990) can be misleading as it may imply that the environment is of secondary importance. SLA does not seek to facilitate human development at the expense of the environment: *"However, while it starts with people, it does not compromise on the environment. Indeed one of the potential strengths of the livelihoods approach is that it "mainstreams" the environment within a holistic framework"* (Carney, 1998). *"Short-term survival rather than the sustainable management of natural capital (soil, water and genetic diversity) is often the priority of people living in absolute poverty. Yet, DFID believes in sustainability. It must therefore work with rural people to help them understand the contribution (positive or negative) that their livelihoods are making to the environment and to promote sustainability as a long-term*

*objective. Indicators of sustainability will therefore be required"* (Carney, 1998).

It is sometimes said that human development as encouraged by UNDP has more in common with the earlier "basic needs" approaches to poverty measurement and alleviation than to Sen's vision of capabilities (Srinivasan, 1994; Ravallion, 1992). "Basic needs" is a generic term which covers approaches based on the notion that human beings need a basic set of resources (food, water, clothing, shelter etc.) to survive. Exactly what these are, can vary depending upon who is defining "basic needs". Sen makes a clear distinction between "basic needs" and capabilities (Sen, 1984), but even so, the influence of human development on SLA is clear. Nonetheless, the origins of SLA predate the origin of UNDP's human development (de Haan, 2005), and includes an influence from what was called "new household economics" in the 1980s and its focus on household labour, income generation and expenditure, even if there were recognized limitations to seeing households in such mechanical terms: *"The major shortcoming of structural-functional and economic approaches to the household is the neglect of the role of ideology. The socially specific units that approximate "households" are best typified not merely as clusters of task oriented activities that are organized in variable ways, not merely as places to live/eat/work/reproduce, but as sources of identity and social markers. They are located in structures of cultural meaning and differential power"* (Guyer and Peters, 1987, 209). There are resonances from the more macro-scale field of "integrated rural development" (IRD) which was very much in vogue during the 1960s and 1970s amongst major funders such as the World Bank (Yudelman, 1976; D'Silva and Raza, 1980). It is therefore important to evaluate what the SLA has contributed to understanding poverty, vulnerability and livelihood issues related to the environment. Sustainable livelihoods approaches have evolved from three decades of changing perspectives on poverty, how poor people construct their lives, and the importance of structural and institutional issues (Ashley and Carney, 1999).

The SL approach was developed within research institutes (for example, the Institute of Development Studies), NGOs (for example, CARE and Oxfam) and donors (Department for International Development and the United Nations Development Program). Whilst the SL framework is constantly evolving, experimental in nature and the product of institutional collaboration, it is already widely used in a number of influential international development agencies, informing program content, assessment parameters and goal formation (Carney et al., 1999). It has been used by FAO in its strategic framework (Altarelli and Carloni, 2000), by CARE in its 'household livelihood security' program (Drinkwater and Rusinow, 1999), and by the UNDP and Oxfam (Neefjes,

1999). In the UK, the DFID increasingly uses SL approaches in the context of the commitment made in the Government White Papers on International Development (DFID, 1997; DFID, 2000) to work towards the International Development Target of eliminating poverty by 2015.

According to Baumann (2002), SLA does not claim to be a new development paradigm or even a new approach to development. Baumann went further to say that the favored terms by those involved in the evolution of the SLA is 'Sustainable Livelihoods Approaches' – meaning a set of principles, backed up with a set of tools; the plural (approaches) is used deliberately to indicate that there is no single way forward that might conflict with other development approaches (Ashley and Carney 1999: 9). This SLA has been a self-conscious process with much review amongst SLA practitioners to examine whether or not the SLA is in fact contributing towards an improved understanding and targeting of development problems. The benefits of SLA and an evaluation of its contribution are difficult for several reasons. First, it is hard to draw a line between the SLA and other approaches to development because the SLA is an evolutionary collection of best practice principles. Secondly, it is hard to maintain clarity between the contribution of SLA as an approach to development practice, an analytical framework and a development objective. Finally, because 'sustainable livelihoods' has been a development objective for so long, it is difficult to distinguish the difference that the—for this purpose not helpfully named—SLA has made.

These difficulties according to Baumann (2002) in the evaluation of SLA are particularly pronounced in considering the SLA contribution towards the issue of the rural poor and access to natural resources. This issue is closest to the heart and evolution of the SLA and the terms and concepts used are hard to distinguish from those used in the last few decades of development debate. However, since the concepts surrounding access to natural resources have been so considered in SLA, the framework also has the potential to make a significant contribution to the debate.

So it is that SLA emerged in the context of an increasingly complex rural reality and has evolved with the objective of providing a practical and effective means to make sense of this complexity and a pragmatic and people-centered means to identify development interventions. The SLA directly acknowledges the issues in current thinking on poverty, vulnerability and livelihoods.

### **The sustainable livelihoods framework**

The sustainable livelihoods conceptual framework is a particular form of livelihoods analysis used by a growing

number of research and applied development organizations, including the DFID of the United Kingdom, the United Nations Development Program (UNDP), as well as non-governmental organizations (NGOs) such as CARE and Oxfam (DFID, 1997; Carney et al., 1999). It is a conceptual framework for analyzing causes of poverty, peoples' access to resources and their diverse livelihoods activities, and relationship between relevant factors at micro, intermediate, and macro levels. It is also a framework for assessing and prioritizing interventions.

The sustainable livelihoods framework takes as a starting point an expanded definition of poverty that looks *beyond* the following: conventional poverty measures based on income, consumption, or nutrition to *additional aspects of poverty and well-being*, for example, access land, water, credit, or education, vulnerability to natural disasters, political rights, physical safety, and social relationships that provide economic security and social well-being; "today's poor" to who is vulnerable or likely to be "*tomorrow's poor*"; aggregated household or head counts to *the effects of social differentiation* by class, ethnic group, gender, and other locally-specific social differences; and external standards to *self-perceptions by local communities* on who is poor and what poverty means, taking into account what people themselves value (Narayan-Parker et al., 2000).

One feature of the SLA framework is that, it looks at more aspects of people's lives than how many live on a purchasing power of \$1.00 a day or how many households consume less than 2,000 calories per person per day. For example, participatory poverty assessments or case study research can identify the features by which people in rural areas themselves identify poor or well-off households.

A second key feature of the sustainable livelihoods framework is that, it recognizes people themselves, whether poor or not, as actors with assets and capabilities who act in pursuit of their own livelihood goals. While this may seem obvious, in many cases the poor have been regarded as passive victims or recipients of government policies and external aid.

### **Indicators of sustainable livelihood**

#### ***Poverty reduction***

There continues to be much debate about how poverty should be defined, but it is increasingly accepted that poverty is not just a lack of material necessities, assets and income. The notion of poverty has been broadened to include a deprivation in capabilities, voice and power that contribute towards a lack of well-being (Baumann, 2002).

The poverty level is a key criterion in the assessment of livelihoods. Various measures can be used to develop an

absolute 'poverty line' measure based on income or consumption levels (Ravallion, 1992; Baulch, 1996). Alternatively, relative poverty and inequality can be assessed using Gini coefficient measures. There are a range of pros and cons for each measure, as well as some major measurement challenges (Greeley, 1994). However, such quantitative assessments of poverty can be used in combination with more qualitative indicators of livelihoods (Jodha, 1988; Schaffer, 1996).

### **Well-being and capabilities**

'A livelihood comprises the capabilities, assets including both material and social resources, and activities required for a means of living. A livelihood is 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, not undermining the natural resource base' (Chambers and Conway, 1992).

### **Livelihood adaptation, vulnerability and resilience**

Vulnerability as a concept in the SLA refers to the external environment in which people pursue their livelihoods and their exposure (risk) to the negative effects of the external environment, as well as their resilience in resisting and recovering from external shocks and trends.

The vulnerability context describes the trends, shocks and seasonality over which people have limited or no control, but which nevertheless affect people's livelihoods and the wider availability of assets. These factors are important because they have a direct impact on people's asset status and the options that are open to them.

The vulnerability context according to Scoones (1998) encompasses *trends* in population, resources and economic indicators, such as, prices, governance, or even technology; *shocks* such as changes in human or animal health, natural disasters, sudden economic changes, or conflict; and *seasonality* in prices, agricultural production, employment opportunities, resource availability, or health. Vulnerability in the above context refers to things that are outside people's control. It is usually negative but it can also provide positive opportunities. It is not objective "risk" that matters, but people's subjective assessments of things that make them vulnerable. These matter because both perceived and actual vulnerability can influence people's decisions and hence their livelihood strategies. This is especially important for whether people are willing or interested in adopting agricultural technologies.

### **Natural resource base sustainability**

Vulnerability is closely linked to access to resources

(capital assets) since they are principal means by which people reduce their vulnerability. It is the access to resources, assets and entitlements that together give people the capabilities to pursue livelihood strategies that may have direct material as well as more individually subjective objectives.

The asset base upon which people build their livelihoods includes a wider range of assets. Instead of looking only at land or other classic wealth indicators, the sustainable livelihoods framework suggests consideration of an asset portfolio of five different types of assets:

1. Natural capital: includes land, water, forests, marine resources, air quality, erosion protection, and biodiversity.
2. Physical capital: includes transportation, roads, buildings, shelter, water supply and sanitation, energy, technology, or communications.
3. Financial capital: includes savings (cash as well as liquid assets), credit (formal and informal), as well as inflows (state transfers and remittances).
4. Human capital: includes education, skills, knowledge, health and nutrition, and labor power.
5. Social capital includes all networks that increase trust, ability to work together, access to opportunities, reciprocity; informal safety nets; and membership in organizations.

Though most versions of the sustainable livelihoods framework are limited to these five kinds of capital, some add political capital as a sixth type of asset, which can include, for example, citizenship, enfranchisement and membership in political parties – all assets that can be key in obtaining or operationalizing rights over other assets (Baumann, 2002).

Following Conway (1985), Holling (1993) and others, natural resource base sustainability refers to the ability of a system to maintain productivity when subject to disturbing forces, whether a 'stress' (a small, regular, predictable disturbance with a cumulative effect) or a 'shock' (a large infrequent, unpredictable disturbance with immediate impact). This implies avoiding depleting stocks of natural resources to a level which results in an effectively permanent decline in the rate at which the natural resource base yields useful products or services for livelihoods (Scoones, 1998).

### **Creation of working days**

This concept relates to the ability of a particular combination of livelihood strategies to create gainful employment for a certain portion of the year. This may be on or off-farm, part of a wage labour system or subsistence production. Sen (1975: 5) notes three aspects of employment – income (a wage for the employed), production (employment providing a consumable output)

and recognition (where employment provides recognition for being engaged in something worthwhile). In terms of the income/production aspects, various target levels have been suggested, but 200 days a year appears to be widely used as a minimum level to create a livelihood (Lipton, 1991, 1993). Overall, the number of livelihoods created will be dependent on the proportion of the population available for work.

### **Sustainable livelihood approach (SLA) problems and opportunities**

In Baumann (2002), access to cultivable land is the most important natural resource for rural development and is key in determining the livelihood strategies of the rural poor. Agriculture accounts for most land use in developing countries and three quarters of the 1.2 billion people surviving on less than one dollar a day live and work in rural areas. The ownership, management and productive use of cultivable land is a key determinant of economic growth and has a direct though complex effect on how other natural resources such as water, forests, pasture and biodiversity are used. The future role of agriculture is one of the key unresolved issues in the current rethinking of poverty-environment-agriculture linkages. The notion that agricultural growth based on small farms would drive rural development is being called into question. Agriculture has declined sharply in relative terms both as an employer and a contributor to GDP and the long-term decline in agricultural commodity prices has weakened both the sector and the case for small farmer development (*ibid*). The agricultural sector is more integrated into the world economy with generally negative consequences for the terms of trade; and evidence that agriculture is pushing against natural resource boundaries is fairly conclusive. These trends have led to what has been termed a 'loss of confidence in the rural development project' (Ashley and Maxwell, 2001) and funding to the sector and in particular to agriculture has declined despite evidence that poverty is still largely a rural phenomenon.

From the above, the constraints and opportunities that the rural poor typically face with respect to access to cultivable land from an SLA perspective could be well understood. The balance between the constraints and opportunities faced by the rural poor and the livelihood outcomes that can be achieved are clearly highly context specific. The evidence on poverty and access to land does very broadly point to a mutually reinforcing negative linkage; the poor live in areas of low agricultural potential characterized by a fragile ecology, with little infrastructure and weak market integration and connectivity. Rural diversification has for long been seen in negative terms; as evidence of increasing rural vulnerability and a widening disparity in income between the rich and the poor in rural areas. In fact, the overall finding has been

that income disparities in agriculture tend to reproduce themselves in the non-farm rural economy. It was also considered that diversification led to a stagnation or decline of agricultural output and the depletion of local social capital; with particularly poor gender effects as women have the least possibility to take advantages of new opportunities (Baumann, 2002).

Despite the negative overall relation between poverty and the environment, the focus in current development policy, and in the SLA, is on people's strengths. Research from a livelihoods perspective has been at the forefront of a reconsideration of the constraints that the rural poor face. In essence, it has been pointed out that rural livelihoods should not be seen as agrarian livelihoods or even natural resource based livelihoods. Although, natural resources and access to land remain a predominant source of rural income, these have to be seen in wider perspective. In fact the positive effects of diversification have been shown to outweigh the negative ones. They include: the reduction of risk and vulnerability through spreading assets; more complete use of family and household labor; cash generation for investment in human or physical capital, and in some cases, improvement in the environment because of reduced pressure on natural resources (Scoones, 1998).

Given this positive experience of diversification the focus has shifted onto the types of livelihood strategies that are emerging and the types of resource access, capability enhancement and political economic factors, upon which they have been based, and the conditions under which they may become more sustainable and poverty alleviating. The focus in SL research on access to land issues has been to capture the diversity and heterogeneity of responses rather than to quantify their incidence. Examples of such types of SL research include Brock (1999) on livelihoods in Mali; Batterbury (2002) on livelihoods systems in Niger; Haan et al. (2000) on migration and livelihoods in Bangladesh, Ethiopia and Mali; and Goodrich (2001) with a summary of livelihoods research in Mali and Ethiopia.

## **MATERIALS AND METHODS**

### **Data and study area**

The ultimate purpose of the field survey conducted was to collect qualitative and quantitative information to help to better understand, explain and interpret the livelihoods of the rural poor, and their negative impacts on the environment, which is the core issue of this study.

Therefore, the data used in this study came from a survey conducted in January 2013 in two oil producing areas in each of the three senatorial districts in Delta State (Eruemukohwarien and Orhoakpor in Delta Central, Benekuku and Okpai in Delta North and Oleh and

**Table 1.** Responses to poverty lead to environmental degradation in the study area.

Category	Very high		High		Moderate	
	N	%	N	%	N	%
Land	268	74.4	58	16.1	34	9.5
Water	201	55.8	109	30.3	50	11.9
Forest	230	63.9	71	19.7	59	16.4

Olomoro in Delta South).

Based on the available population figures, each of the communities was divided into 6 clusters of 10 persons to attain the sample size of 360. In each cluster, all farmers of 50 years and above who consented to be included in the study were examined. These include heads of communities, community chiefs, the spokesmen, elders and other opinion leaders purposively selected from 6 villages (10 respondents per cluster from each community were selected with probability proportional to size).

Within each village, 60 of the above set of key informants more or less evenly divided were selected through purposive sampling. The choice of respondents was based on the fact that they are very knowledgeable and conversant with their area.

In each cluster, the starting point was a purposive sampling technique, involving the targeting of individuals that suits the subject and nature of study using predetermined selection criterion randomly selected and beginning from there, the nearest door rule (that is, the first house, whose door is nearest to the door of the current house) was used for locating the subjects.

The choice of communities was highly related to their recent cries for marginalization and issues of environmental pollution by oil companies. Relevant statistical tables were used in data presentation and analysis.

## RESULTS AND DISCUSSION

Rural poverty has been accepted as both a major cause and result of degraded soils, vegetation, forests, water and natural habitats. The importance of environment-poverty links for the natural resource, health and vulnerability dimensions of the livelihoods of the poor is evident in empirical research. Environmental factors are responsible for almost a quarter of the entire disease burden of developing countries; unsafe water, inadequate sanitation and waste disposal, and air pollution are a major problem for the poor (DFID, 2001). Rapid deforestation and biodiversity losses are depriving people of valuable forest resources, such as fuel wood, food and medicine. Soil degradation is a major threat to the livelihoods of 1 billion people, mostly the poor who are

more likely to live in degraded or fragile areas. Projections of rural population growth, agricultural expansion and intensification and poverty in the next few decades suggest a potentially serious conflict between natural resource sustainability and poverty in rural areas (Scherr, 1999).

### Poverty leads to environmental degradation

In Table 1, 268 (74.4%) of the 360 persons sampled said that the rate at which poverty leads to soil degradation is very high and 58 (16.1%) said the rate is high. But 34 (9.5%) were of the view that the rate of soil degradation as a result of poverty is moderate. Majority of the sampled persons said that the rate of soil degradation is very high as a result of poverty. There were 201 (55.8%) of the population who agreed that rivers degradation rate is very high while 109 (30.3%) said that the rate is high. Meanwhile 50 (11.9%) of the 360 persons sampled agreed that the rate of rivers degradation is moderate.

However, 230 (63.9%) of the population sampled were of the view that forest degradation rate is very high due to poverty while 71(19.7%) said that the rate is high. On the other hand, 59 (16.4%) of the respondents agreed that the rate of forest degradation as a result of poverty is moderate. It can be deduced from the above that poverty is a factor of environmental resources degradation.

Natural resources role in the livelihood strategies of the rural poor has been confirmed in a number of participatory poverty assessments that set out to consider the issue from the perspective of the poor themselves. 'Well-being was strongly related to the environment in terms of health, security, peace of mind; pleasant and hygienic physical surroundings; safe and clean energy supplies appropriate to the climate and seasons; decent low density housing free from overcrowding and built on safe ground free from flooding and other environmental hazards. People in rural areas placed emphasis on access and control over natural resources particularly in relation to food security and agricultural production' (DFID, 2001: 16).

### Poverty breeds criminality

From Table 2, 280 (77.8%) of the 360 people sampled



**Table 2.** Responses to poverty breeds criminality.

Category	Very high		High		Moderate	
	N	%	N	%	N	%
Kidnapping	280	77.8	54	15	26	7.2
Armed robbery	60	16.7	242	67.2	58	16.1
Thuggery	20	5.6	24	6.7	316	87.8

**Table 3.** Responses to poverty lead to over-exploitation of environmental resources.

Category	Very high		High		Moderate	
	N	%	N	%	N	%
Soil	114	31.7	142	39.4	109	28.9
Wildlife	200	55.6	108	30	52	14.5
Forest	114	31.7	143	39.7	103	26.6

said that kidnapping is very high with 54 (15%) having the view that it is high while 26 (7.2%) agreed that kidnapping is moderate. With respect to armed robbery in the region, 60 (16.7) of the respondents were of the view that it is very high with the bulk saying it is high 242 (67.2%) while 58 (16.1%) said the rate of armed robbery is moderate. The table also revealed that thuggery is moderate with 316 (87.8%) responses as against 24 (6.7%) respondents saying that the rate is high while 20 (5.6%) agreed that it is very high in the area.

According to Hassan (2004), the widespread poverty has given rise to criminal activities among some elements of the population, occasional inter-ethnic conflicts in some places and deep-seated corruption across the country. He gave some causes of unemployment that had seriously weakened the private sector as the engine of growth and the sharp fall in aggregate bank credit resulting in crises in financial inter-mediation and collapse of investment. He went further to state that at independence in 1960, Nigeria's poverty rate was 15% of the population that translated into about eight (8) million Nigerians.

Forty-four years later, the population of Nigerians living below the international poverty benchmark of US \$1 a day is 70.2%. At the current level of the country's population of 126.2 million, this translates into about 88.6 million people living in abject poverty thereby making Nigeria a nation with the highest concentration of people living in extreme poverty.

The rural poor rely heavily on natural resources and live in areas of high ecological vulnerability and relatively low levels of resource productivity. Estimates indicate that if current trends persist, by 2020 more than 800 million people could be living on marginal lands (Hazzell and Garrett, 1996).

### Poverty leads to over-exploitation of environmental resources

From Table 3, 114 (31.7%) of the 360 persons sampled agreed that the rate at which poverty leads to over exploitation of soil resources is very high and 142 (39.4%) said the rate is high. But 109 (28.9%) of the people said the rate is moderate. Since the majority of the people sampled are of the view that the rate of soil resources over-exploitation is very high, it therefore means that poverty leads to the over-exploration of soil resources. The rate at which poverty leads to wildlife over-exploitation is very high with 200 (55.6%) responses out of the 360 persons interviewed. There were 108 (30%) of the 360 persons who agreed that the rate is high while 52 (14.5%) said that the rate is moderate.

With respect to forest resources over-exploitation, 114 (31.7%) out of 360 persons sampled said that the rate at which poverty leads to over-exploitation of forest resources is very high and 143 (39.7%) agreed that the rate is high. However, 103 (26.6%) of the sampled population were of the opinion that the rate of forest resources over-exploitation is moderate.

The interplay between the environment and the economy remains at the heart of sustainable development (Pearce and Barbier, 2000). Very often, the poor are perceived to be a key problem in achieving sustainability, both in terms of the government meeting their basic needs and their own extensive and desperate socio-economic activities in ecologically fragile lands (Chokor, 2004). The widely held view is that poverty propels negative and unsustainable natural resource exploitation practices. The 2002 UN World Summit on Sustainable Development, held in Johannesburg, urged states not only to take immediate steps to make progress

in the formulation and elaboration of national strategies for sustainable development, but also to push for poverty eradication as it was crucial to the attainment of environmental sustainability (UNSD, 2007).

In discussing the consequences of poverty, Von Hauff and Kruse (1994) highlighted on three major consequences, which include;

1. Consequences for those affected which means that poverty leads to physical and psychological misery, caused inter-alia by inadequate nourishment, lack of medical care, a lack of basic and job-related education and marginalization in the labor markets.
2. Consequences for the national economics of countries affected arising through the formation of slums in cities, a worsening of ecological problems particularly, as a result of predatory exploitation in the agricultural sector and through failure to use the available human resources.
3. Consequences for the political and social development of the countries affected. That is, mass poverty tends to preserve or reinforce the existing power structures and thus the privileges of a minority of the population. These privileged minorities in the population are not generally interested in structural changes for the benefit of the poor population. As a consequence, mass poverty tends to inhibit the development of democratic structure and a higher level of participation. According to Aku et al. (1997) who observed that with mass poverty there tends to be a general loss of confidence in the constituted authority (thereby generating disrespect and rendering government policies ineffective) political apathy among contending forces; and social disillusion with respect to what the societal objectives are and peoples' responsibilities towards the attainment of those objectives.

## Conclusion

The sustainable livelihoods framework is gaining popularity as an approach for addressing poverty among a wide range of development organizations. The framework introduces many factors and relationships that are often missing from conventional reductionist approaches. This can provide important insights about the reality that rural household, especially the poor, face—insights that might otherwise be missed. In particular, the framework highlights the importance of different sources of vulnerability.

A broad range of assets is considered, not only conventional land and financial resources. Households and even individuals are not regarded as only “farmers,” “laborers,” or “business operators.” Instead, a wide range of simultaneous livelihood activities and strategies is recognized. Policies, institutions and related processes that form the environment in which livelihood strategies

are pursued are considered central to the analysis. Finally, the outcomes include much more than just income levels or food security. Although there are important dimensions of people's lives that the framework does not explicitly address, these can be integrated into the framework or addressed through the inclusion of other types of analysis in the study.

The SL approach also places people at the centre, in an environment where analysis has hitherto focused almost exclusively on resources or institutions. The SL approach facilitated a process of stepping back and looking at the wider issues affecting rural development. This it does by extending the menu for support to livelihood development both in the short and long term. The framework proved to be a useful tool for structuring a review of secondary information sources and offered a way of organizing the various factors and making relationships between them. From another vantage point, SLA specifically highlighted the links (or lack of them) between the macro and the micro level and highlights that higher level policy development and planning is being formed with little knowledge of peoples' needs and priorities.

However, SL approaches seem to have contributed to development effectiveness by:

- Placing people and the priorities they define firmly at the centre of analysis and objective-setting;
- Supporting systematic analysis of poverty issues in a way that is holistic – hence more realistic – but also manageable, and which synthesizes issues across sectors and levels; and
- Achieving a wider and better informed view of the opportunities at all levels for making an impact on poverty, and how external support can be tailored to fit better with livelihood priorities.

## RECOMMENDATIONS

Below are some useful suggestions to better the lots of the rural poor and improve their livelihoods in the communities.

1. With the current trend, agriculture will not be able to support the rural population which means that diversification is therefore inevitable. In that sense, diversification is positive and evidence shows that it is not necessarily a survival strategy but also one that can lead to accumulation of capital assets and conservation of natural resources. Diversification can assist households to insulate themselves from environmental and economic shocks, trends and seasonality; in other words, to be less vulnerable. Access to natural resources remains critical, sometimes even more so as a result; but the linkages between access to natural resources and livelihoods are more complex than had previously been taken into

account (Bebbington, 1999). Many agricultural and mineral products can be found in the Niger Delta. From this vast array of natural and human resources, the Niger Delta offers immense opportunities for developing a diversified economy. Making use of these existing resources would reduce the heavy focus and reliance on oil and gas, and provide a basis for growth within the region (UNDP, 2006). This would in turn expand employment, productivity, and income of the poor, enhance human and institutional capacities, as well as help to eradicate poverty through improved livelihoods.

2. Provision of loan and forms of community-based incentives should be encouraged to enable efficient resource utilizations and good sustainable development practices in the areas.

3. Good and innovative agricultural practices should be encouraged and sustained to avoid over-exploitation of the available natural resources.

4. An alternative source of cooking means should be introduced and discourages deforestation for fuel woods.

5. Access by the poor to natural resources which are land, forests, water, fisheries, pastures, etc. is essential for sustainable poverty reduction. The livelihoods of rural people without access, or with very limited access to natural resources are vulnerable because they have difficulty in obtaining food, accumulating other assets, and recuperating after natural or market shocks or misfortunes. Consideration of access to land issues along these lines is likely to lead to more appropriate development policies. For instance, if it is known that rural households in a particular location depend on migrant remittances rather than agriculture, than a policy for training to enable better job security would be more appropriate than policies on new agricultural technology (Scoones, 1998).

6 Efforts should be geared towards targeting vulnerable communities/households/persons and to assess their vulnerabilities and strengths to put in place programs to alleviate their sufferings.

7. Policies should be geared towards building resilience and strengthening recovery capacities.

8. Focus should be on supporting local institutions, communities, civil society and producer organizations.

9. Efforts should also be aimed to regenerate and conserve degraded lands upon which their community depends.

10. There is the need to tap existing knowledge and ongoing efforts to determine *what works*, enable community-driven strategies and actions; ensure buy-in, sustenance and longevity.

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