



Environment, Oil and Rural Livelihood in Ogba Communities, Rivers State Nigeria

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ABSTRACT

This study examined the natural environment, crude oil exploration and rural livelihood in Ogba clan of Rivers State, particularly the effect of environmental degradation as occasioned by crude oil exploration on the clan's existence. The tribe has a population of two hundred and eighty-four thousand and ten (284,010) persons as at 2006 census, however was projected to be 398,000 persons by March 2016 according to NPC and NBS web, census data 2019. Nevertheless, a sample size of 300 respondents was adopted for the study based on the application of quota sampling scientific principle. This study adopted the Political Economy as the theoretical frame work, whereas it methodologically engaged the cross-sectional study design and analytical techniques in addition to the Focus Group Discussion (FGD). The study findings divulged strapping link between crude oil exploration, environmental degradation and rural livelihood loss in Ogba communities, therefore, there exist strong tie between the natural environment and rural livelihood in Ogba, also, oil exploration does impact negatively on the composition of its environment, and environmental degradation does have negative effect on sustainable rural livelihood particularly in the study clan, in addition to rural livelihood not being sustainable due to environmental degradation, lastly, oil exploration and declining rural livelihood does have negative effect on Ogba culture. The study thereafter recommended the application of scientific approaches on environmental issues in the clan by extension Rivers State.

Keywords: Natural Environment, Oil Exploration and Rural Livelihood.

INTRODUCTION

According to Ella, (1995) the Ogba ethnic race historically migrated from the ancient Benin kingdom centuries ago to its present settlement in Orasi Region of Niger Delta, hence the ancestral correlations. The tribe consist of three settlements, with **Egi** neighborhood having seventeen rural suburbs, namely, Akabuka, Akapta, Edeh, Egita, Elu-Okpomini, Erema, Ibewa-Aliocha, Itu, Obagi, Obesimini, Obigbor, Obite, Obiyebe, Oboburu, Obukegi, Ogbogwu and Ohali-Elu; while **Igburu** district encompasses twelve communes, branded Ikiri, Egbeda, Eleita, Amaah, Elehia, Okansu, Oshiakpu, Ohiugha, Uju, Okposi, Obigwe and Ogbidi, whereas **Usomini** division has fifteen localities, which consist of, Obrikom, Obie, Krigani, Ohalimini, Aligu, Idu-Osobile, Obor, Ebogoro, Okprukpuali, Ebocha, Onuosi Ogu, Alenzoh, Idu-Osobile, Obosukwu and Omoku the Local Government Headquarter, with a merged population of two hundred and eighty-four thousand and ten (284,010) persons as at 2006 census, though was projected to be 398,000 persons by March 2016, according to NPC and NBS web, data 2019.

The clan like other tribes in Rivers State is multicultural with captivating cultural heritage and socio-cultural values, according to Ivan, (1983). Traditionally, the Ogbas depends on the natural environment for her livelihood and survival, therefore draws cultural inspirations therein in line with Kaimowitz, (2003), World Bank, (2004) and FAO, (2008) who contended that rural family units all over the emerging world utilizes food, fuel, fodder, cultural relic, construction materials, medicine and other products from the forests and other natural and non cultivated environments to meet their subsistence needs and create cash income for the family. Also UNDP, (2006), Jack, Akujobi, DanAxe, and Azubuiké, (2016) opined that the natural environment is crucial to the Niger Delta region where over 60% of its inhabitants depends on it for its daily continuous survival. In the same vein Irikana, (2015) favoured the assertion that from the natural environment, indispensable edible foods and drinks are gotten, it is also the source of fresh and healthy air, medicine, building materials, great variety of natural resources and other socio-economic benefits. Being predominant farmers, fishermen and local traders, the natural environment is held at high esteem in Ogba land. Supporting this view, CBD (1992) and Veitayaki (1997) argued that even in apparently non-resource dependent communities, the natural environment is still highly valued as one of the world's most critical resources. However, the advent of crude oil exploration altered the clan's natural environment by extension it's culture and livelihood, prompting a shift in the ancient relationship in line with Maffi and Woodley, (2007) who observed that nature and culture network in a number of ways that traverses values, beliefs and norms to practices, livelihoods, knowledge and languages. As a result there exists shared feedback between cultural systems and the environment, with a change in one occasioning modification in the other. Against this backdrop, Halleon, (2009), justifiably, argued that since farming is the main activity of the communities living in the Niger Delta Region, with nearly 60% of the population dependant on the natural environment for its livelihood, oil-generated environmental pollution, which affects farming and fishing, makes it extremely difficult for the inhabitants to earn a living. It is on this premise that IFAD (2012), explained that 'about one billion of the world's 1.4 billion extremely poor people live in rural areas and about three quarter of them depends on agriculture and related activities for their livelihoods. Sustainable Environment and Natural Resource Management (ENRM) lies at the heart of delivering poverty reduction for these people'. On this premise, Salau (1993) opined that the protection of the natural environment is equally an essential component of development. Without adequate environmental protection, development is undermined and without development to make available resources needed for investment, environmental protection will fail. Thus economic and livelihood growth and sustenance depends to a large extent on the maintenance of environmental quality and environmental quality in-turn depends to some extent on the maintenance of the well being of the people.

Against the backdrop of oil exploration and environmental degradation threats, several studies had queried the gains and pains of oil exploration, prompting, Adeyemu, (2003) argued that the increase imprint of human activity on nature and the expanding of dominant nationals, growing human population and planetary dynamics operating at global scales increasingly governs and transforms the components of the earth system. Also, World Resource Institute Report (1992) confirmed that industrial waste are growing in quantity and becoming more varied, more toxic and more difficult to dispose of or degrade, increasing the number of persons exposed to these pollutants. Since 1964 when concrete mining and exploration activities began in Ogba clan, in addition to colossal urbanization and industrialization, it has been the circumstance of massive environmental degradation and its consequences which in this case impacted negatively on the clan's sustainable rural livelihood, occasioning domestic frictions and indigenous socio-cultural values decline/loss. Unfortunately, Ogba clan is host to several private and public companies, schools, markets, estates, recreational centers etc, these firms and organizations wield undue strain on the clan's natural environment by extension its indigenous rural livelihood.

It is against these developments, uncertainties and discord within the environment that this study investigated the natural environment, oil exploration and rural livelihood in Ogba communities, Rivers State, particularly on the scientific principles that would engender or influence sustainable rural livelihood in the clan.

THEORETICAL FRAMEWORK

Ake, (1981) argued that political economy is the science employed to comprehend the wholeness of society. It is the investigation of historical and economic relationship by means of class in social action. The theory presumes that there exists dialectical relationship between man and nature, occasioning contradictions. These incongruities manifests in class inequality and exploitative relationship between the influentially wealthy and the incapable deprived (the rich and the poor) which Marx maintained was the fundamentals of capitalist economic system, according to Schaefer, (2000). Consequently, these exploitative tendencies of the system against the developing nations and the transfer of same to the principal industrialized nations would only strengthen the obliteration of the natural resources of the poorer regions with its numerous costs, in this case, the unquantifiable damage of the rural livelihood system as observed in Ogba clan. However, despite the numerous intellectual criticisms tailored against Marxism and the political economy theory in the area of labour wage, rent and capital profit and the ideas on how to change the economy by means of proletarian socialist revolution and eventual communist society, the theory remains the significant pointer to comprehend the foundation and ills of environmental despoliation in Ogba Villages by extension the ensued dearth of rural livelihood.

RESEARCH METHODS

Research Design

This study employ the cross-sectional study design and analytical techniques owing to its capacity to explain occurrences and reality concerning a people or subgroup within population as relating to the outcome of a study.

Research Setting

The study was essentially restricted to Ogba communities in Rivers State via its three rural settlements of **Egi** with Akabuka, Erema, Obagi, Obite and Ogbogwu communities, **Igburu** with Ikiri, Amaah, Oshiakpu, Okposi and Ogbidi communities, whereas **Usomini**. has Obrikom, Krigani, Ohalimini, Ebocha and Omoku communities, meaning 15 communities for the study.

Settlements	Selected Communities	Number of Respondents	Percentage
Egi	Akabuka,	20	6.7
	Erema,	20	6.7
	Obagi,	20	6.7
	Obite,	20	6.7
	Ogbogwu.	20	6.6
		100	33.3
Igburu	Ikiri,	20	6.7
	Amaah,	20	6.7
	Oshiakpu,	20	6.7
	Okposi,	20	6.6
	Ogbidi.	20	6.6
		100	33.3
Usomini	Obrikom,	20	6.7
	Krigani,	20	6.7
	Ohalimini,	20	6.7
	Ebocha,	20	6.6
	Omoku	20	6.6
		100	33.3
Three settlements	Fifteen Communities	300	100

Sample and Sampling Technique

This study employed both probability and non-probability sampling methods, though the judgmental/purposive techniques were used on the principle of non-probability method to arrive at Ogba

communities amongst the numerous communities in Rivers State, based on encoded terms (Environment, Oil and Rural Livelihood in Ogba Communities, Rivers State) pertinent to this study. However, the cluster and simple random methods were used on the premise of the probability method. The process entails certain processes, starting with the clustering of the fifteen purposefully selected communities into three zones. The following segment necessitated the random selection of house-holds from each of the cluster which consists of traditional rulers, family heads, adults, workers, farmers, traders and self employed.

Population Size

Ogba communities have a population of two hundred and eighty-four thousand and ten (284,010) persons as at 2006 census, however was projected to be 398,000 persons by March 2016 according to NPC and NBS web, census data 2019.

Sample size

The quota sampling scientific principle was employed to arrive at the study sample size of 300 respondents. Among these are males of 18–37 years =70 respondents, 38–57 years =70 respondents and 58 years plus, 60 respondents, totaling 200 males and 100 females gotten from 18-37 years having 35 respondents, 38-57 years also 35 respondents and 58 and above, 30 respondents. Additional dissection exemplifies 140 males and 80 females from 220 respondents as farmers and fishermen, whereas 40 respondents from 30 males and 10 females are traders, civil servants has 10 from 10 males, while unemployed has 10 from 8 males and 2 females and others has 20 respondents from 15 males and 05 females. No formal education has 100 respondents from 60 males and 40 females, primary educational accomplishment has 120 from 90 males and 30 female respondents and secondary education has 60 from 40 males and 20 females, tertiary education has 20 respondents from 15 males and 05 females. Lastly among the 300 respondents are 240 Christians from 90 males and 150 females, Islam faith has only 10 males, traditional religion has 50 respondents from 45 males and 05 females whereas others has 10 respondents from 10 males only. The statistical principle used in achieving the study sample size guaranteed the scientific generalization of logic obtained from the investigation covers the entire population from where the study sample size was realized.

Data Collection Method

The study basically relied on primary and secondary sources of data. The primary data involved qualitative and quantitative instruments of data collection. Although, the qualitative involved participatory method of focus group discussion (FGD) and the quantitative method required the application of designed questionnaire apparatus. The secondary data were obtained from available literatures, articles and journals both as hard and soft copies from the internet.

Method of Data Analysis

All the data obtained for analysis both qualitative and quantitative pre-coded predetermined option questions were classified and subjected to Microsoft Excel and statistical package for social science (SPSS) analysis and presented with other expressive statistics apparatus like the frequency distribution tables, where simple percentage was used to make deduction etc.

RESULTS AND DISCUSSION

Table 1: Is there any correlation between the natural environment and rural livelihood in Ogba?

OPINIONS OF RESPONDENTS	DISTRIBUTION INCIDENCE				TOTAL	
	MALE		FEMALE			
	NO	%	NO	%	NO	%
Yes there is	150	50.0	100	33.3	250	83.3
Partially	25	8.3	15	5.0	40	13.3
No there isn't	05	1.7	05	1.7	10	3.4
Total	195	60.0	105	40.0	300	100

The objective in table 1 was to ascertain the correlation that exists between the natural environment and rural livelihood in Ogba clan. Against this background, 250 respondents drawn from 150 males (50%) and 100 females (33.3%) explicitly contended that there exist correlation between the natural environment and rural livelihood in Ogba. Also, 25 males (8.3%) and 15 females (5.0%) which is 40 respondents (13.3%) were undecided, hence the partial opinion. Whereas 10 respondents (3.4%) from 5 males (1.7%) and 5 females (1.7%) intentionally kicked against the proposition, as a result there exist no correlation.

Table 2: Has oil exploration impacted negatively on the composition of Ogba environment?

OPINIONS OF RESPONDENTS	DISTRIBUTION INCIDENCE				TOTAL	
	MALE		FEMALE			
	NO	%	NO	%	NO	%
Yes it has	150	50.0	100	33.3	250	83.3
Partially	25	8.3	15	5.0	40	13.3
No it hasn't	05	1.7	05	1.7	10	3.4
Total	195	60.0	105	40.0	300	100

The aforesaid reasoning in table 2 was based on the drive to substantiate or counter the argument that oil exploration impacted negatively on the composition of Ogba environment, as a result of oil spills and gas flare consequences. This argument occasioned 150 males (50.0%) and 100 females (33.3%) being 250 respondents (83.3%) of the sample size approved the opinion that oil exploration does impact negatively on the composition of Ogba environment. While 25 males (8.3%) and 15 females (5.0%) suggesting 40 respondents (13.3%) are of the view that oil exploration does partially impact on the arrangement of Ogba clan environment. Only 5 males (1.7%) and 5 females (1.7%) meaning 10 respondents (3.4%) reasoned otherwise, therefore oil exploration does not impact negatively on the composition of Ogba environment.

Table 3: Does environmental degradation have negative effect on sustainable rural livelihood?

OPINIONS OF RESPONDENTS	DISTRIBUTION INCIDENCE				TOTAL	
	MALE		FEMALE			
	NO	%	NO	%	NO	%
Yes it does	150	50.0	100	33.3	250	83.3
Partially	25	8.3	15	5.0	40	13.3
No it doesn't	05	1.7	05	1.7	10	3.4
Total	195	60.0	105	40.0	300	100

Following the study concern, the aforementioned test was put forward to the respondents in table 3, the statistics show that 250 respondents (83.3%) from 150 males (50.0%) and 100 females (33.3%) consented that environmental degradation does have negative effect on sustainable rural livelihood, particularly in Ogba Clan. On the other hand, 40 respondents (13.3%) from 25 males (8.3%) and 15 females (5.0%) reasoned fractional effect. While 10 respondents (3.4%), derived from 5 males (1.7%) and 5 females (1.7%) disagreed with the deduction, hence environmental degradation does not have any negative effect on sustainable rural livelihood in Ogba Clan.

Table 4: Is the rural livelihood in Ogba Communities sustainable?

OPINIONS OF RESPONDENTS	DISTRIBUTION INCIDENCE				TOTAL	
	MALE		FEMALE			
	NO	%	NO	%	NO	%
No it isn't.	150	50.0	100	33.3	250	83.3
Partially.	25	8.3	15	5.0	40	13.3
Yes it is.	05	1.7	05	1.7	10	3.4
Total	195	60.0	105	40.0	300	100

Table 4 query was to ascertain whether rural livelihood in Ogba Communities is sustainable, prompting 250 respondents (83.3%) from 150 males (50.0%) and 100 females (33.3%) argued that rural livelihood in Ogba Communities is not sustainable due to environmental degradation, 40 other respondents (13.3%) from 25 males (8.3%) and 15 females (5.0%) contended for partially sustainability, whereas 10 respondents (3.4%) derived from 5 males (1.7%) and 5 females (1.7%) maintained that despite the environmental differences, that rural livelihood in Ogba Communities is sustainable.

Table 5: What effect does oil exploration and declining rural livelihood has on Ogba culture?

OPINIONS OF RESPONDENTS	DISTRIBUTION INCIDENCE				TOTAL	
	MALE		FEMALE			
	NO	%	NO	%	NO	%
Negative effect	150	50.0	100	33.3	250	83.3
Partially	25	8.3	15	5.0	40	13.3
Positive effect	05	1.7	05	1.7	10	3.4
Total	195	60.0	105	40.0	300	100

The concern in table 5 was to establish what effect oil exploration and declining rural livelihood have on Ogba culture. Here 250 respondents (83.3%) gotten from 150 males (50.0%) and 100 females (33.3%) maintained it has NEGATIVE effect on the Clan's culture, 25 males (8.3%) and 15 females (5.0%) meaning 40 respondents (13.3%) supported partial effect, while 10 respondents (3.4%) from 5 males (1.7%) and 5 females (1.7%) argued that oil exploration and declining rural livelihood does have positive effect on Ogba culture.

The study surveys in tables one to five were to establish the potency of the opinions which argued that (1) there is correlation between the natural environment and rural livelihood in Ogba, (2) that oil exploration impacted negatively on the structure of Ogba environment, (3) that environmental degradation have negative impacts on sustainable rural livelihood in Ogba Communities, (4) that rural livelihood in Ogba Communities is not sustainable and (5) that oil exploration and declining rural livelihood does have negative effects on Ogba culture. These were achieved through the application of simple percent analysis, where 250 out of the 300 respondents gotten from 150 males (50%) and 100 females (33.3%) unambiguously argued in support of the propositions (1) that there exist correlation between the natural environment and rural livelihood in Ogba, (2) that oil exploration impacted negatively on the structure of Ogba environment, (3) that environmental degradation have negative impacts on sustainable rural livelihood in Ogba Communities, (4) that rural livelihood in Ogba Communities is not sustainable and (5) that oil exploration and declining rural livelihood does have negative effects on Ogba culture. Whereas, 25 males (8.3%) and 15 females (5.0%) which is 40 respondents (13.3%) were ambivalent, hence the partial view, while 10 respondents (3.4%) from 5 males (1.7%) and 5 females (1.7%) by design rejected the entire deductions. However, the focus group discussion (FGD) data also sustained the positive propositions in line with the study objectives outcome.

DISCUSSION OF FINDINGS

By examining the environment, oil and sustainable rural livelihood in Ogba Communities, Rivers State, this study following the test outcome and FGD data further complimented the correlation and usefulness of the natural environment to Ogba Clan, in-addition to exposing the negative consequences of crude oil exploration on the natural environment and rural livelihood, particularly in the study neighborhood. Elucidating on the effects and costs of environmental changes/alterations, Grubler (1994) contended that the hundred fold expansion in global industrial output since 1750 has often been bought at the cost of exploitative threat to occupation and community health and safety, profligate energy and material use, extensive air pollution and generation of hazardous waste and toxic chemicals. Also Krystyna and Swiderska, (2012) maintained that many rural settlements in the global south including over 370 million indigenous peoples are directly reliant on the natural environment and associated customary knowledge

for their livelihoods, food security, healthcare and well-being and other indispensable cultural services provided by it like recreation, occupation and spiritual nourishment that maintain indigenous and social well-being. However, environmental deficiency or degradation indisputably caused the rapid extermination of those precious natural resource bequests, like typical weather resilient crops, medicinal plants, wild foods etc by extension cultural diversity loss at an exceptional degree, which includes the indigenous ancestral knowledge of flora and fauna exploit and conservation. As a result, there exist correlation between the natural environment and rural livelihood in Ogba, oil exploration does impact negatively on the composition of Ogba environment, environmental degradation does have negative effect on sustainable rural livelihood, also rural livelihood in Ogba Communities is not sustainable due to environmental degradation and oil exploration and declining rural livelihood does have negative effect on Ogba culture in line with Eteng (1997) who observed that 'oil exploration and exploitation has over the last four decades (now five plus) impacted disastrously on the socio-physical environment of the Niger Delta oil bearing communities, massively threatening the subsistence and hence the entire livelihood and basic survival of the people'.

SUMMARY AND CONCLUSION

This study cautiously investigated the effects of crude oil exploration on the natural environment and sustainable rural livelihood in Ogba Clan. The study analyzed the correlations and usefulness of the natural environment to the Clan, using a sample size of 300 respondents adopted through the application of the quota sampling technique on the 284,010 population of the Clan. It further distributed the sample size to the three ethnic settlements in Ogba Clan, where 5 communities were selected from each of the settlement, meaning 15 communities adopted for the study by extension each community had 20 respondents.

These settlements are **Egi** with Akabuka, Erema, Obagi, Obite and Ogbogwu Communities. **Igburu** with Ikiri, Amaah, Oshiakpu, Okposi and Ogbidi Communities, whereas **Usomini**. has Obrikom, Krigani, Ohalimini, Ebocha and Omoku communities. Theoretically the study adopted the Political Economy as the theoretical frame work and methodologically employed the cross-sectional study design and analytical techniques with the Focus Group Discussion (FGD).

The study findings revealed an overwhelming correlation between crude oil exploration, environmental degradation and rural livelihood loss in Ogba Communities, therefore, there exists strapping relationship between the natural environment and rural livelihood in Ogba, oil exploration does impact negatively on the organization of its environment, environmental degradation does have negative effect on sustainable rural livelihood, just as rural livelihood in the Clan is judged not be sustainable owing to environmental degradation, and that oil exploration and declining rural livelihood does have negative effect on the Clan's culture.

This study concluded and recommended the application of scientific methods in environmental issues in Ogba Communities, such as **Environmental Law**: which is the study and establishment of statutes, regulations and common-law principles covering air and water pollution, hazardous wastes, the wilderness and endangered wildlife at a variety of regional, national and international levels, according to Stookes, (2005), **Environmental History**: which is the branch of history that focuses on changes in the biological and physical environment connections between material change and changes in ideological representations of the environment and the development of government regulation, law and official policy - McNeil,(2003) and **Ethno-biology**;, the study of culturally based biological and environmental knowledge and cultural perception of the natural world according to Pieroni, A., Price, L.L., and Vandebroek' I (1995).

Also **Ethno-notany**: which is the study of the complex relationship between plants and cultures - Cotton, (1996) and **Bio-cultural Diversity**;, the analyses the relationship between language, culture and the environment as distinct but closely and necessarily related manifestations of the diversity of life on Earth, according to Stutnabb – Kangas et al., (2003) and Maffi, (2005).

Environmental Anthropology: the applied cross-cultural study of relations between people and their environment over time and space. Townsend, (2000); Dove & Carpenter, (2008), **Cognitive**

Anthropology: Building on work of ethnobotanists and ethnobiologists, examines the structure and rational of folk knowledge, according to Brush, (1993). Cognition anthropology investigates cultural knowledge, knowledge which is embedded in words, stories and in artifacts and which is learned from and shared with other humans. D'Andrade, (1995), and also **Cultural (Landscape) Ecology:** the branch of cultural anthropology and cultural geography that studies culture as the primary adaptive mechanism used by human societies to deal with, understand, give meaning to and generally cope with their environment. Recent approaches have stressed the role of local knowledge in adapting to specific physical condition. Brush, (1993).

Descriptive Historical Particularism: which emphasizes the uniqueness of each culture as demonstrated in its knowledge of plants, animals, astronomy and weather, based on Brush, (1993), also, **Ecological Anthropology:** which is a basic scientific study, using systems approach of the links between humans and ecosystems, with a focus on how culture mediates these interactions. Ellen, (1982); Salzman & Attwood; (1996), Kottak; (1999) and, **Environmental Sociology:** Environmental sociology is the study of the interactions between the environment and social organization and behavior. Dunlap & Catton (1979 and 1994); Gramling & Freudenburg, (1996).

Also Ethno-ecology: the scientific study of the way different groups of people in different locations understand their environment and their relationship with their environment. -Nazarea,(2006).

Agricultural Sustainability: which is the development of technologies that are effective for farmers, result in improvements and food productivity and do not have adverse effects on environmental goods and services, according to Pretty, (2002 & 2007).

Environmental Education: which is the organized teaching of the functioning of natural environment and how human behaviour and ecosystems can be managed in order to contribute to environmental sustainability - Marsden, (1997), and **Human Ecology:** the Multidisciplinary study of the relationship between humans and their environment. - Steiner,(2002). Also, **Environmental Ethics:** the branch of environmental philosophy that considers the official relationship between human beings and the natural environment. - Light and Rolston, (2003).

In addition to **System Ecology:** which is an approach to the study of ecology of organisms that focuses on interactions between biological and ecological systems - Kitching, (1983), and **Sustainability Science:** the integrated, place-based study that seeks to understand the fundamental character of interactions between nature and society and to encourage those interactions along more sustainable trajectories, according to Kates et al., (2001); Clark and Dickson, (2004). **Landscape Ecology:** an interdisciplinary field concerned with the study of the distribution and abundance of elements within landscapes, the origins of these elements, and their impacts on organisms and processes. Turner et al., (2001), **Nature Society Theory:** The branch of geography that studies the ways in which societal processes, shape, alter and transforms the physical environment and the resulting production of complex natural-social landscape.- Castree & Braun, (2001), and **Ecosystem Health:** Is a systematic approach to the preventive, diagnostic and prognostic aspects of ecosystem management and to the understanding of relationship between ecosystem health and human health. Rapport, D.J. & Whitford, W.J. (1999), also **Political Ecology:** This is the study of how political, economic and social factors affect ecological processes and how ecologies can shape political and economic possibilities. - Robbins, (2004) and **Symbolic Ecology:** A study which uses the nature-culture prism to make sense of myths, rituals, systems of classification, food, and body symbolism and other aspects of social life. - Descola & Palsson (1996). **Social Ecological Systems (SES):** the study of the diverse relationships between an ecological system and one or more intricately linked social system. - Anderies et al., (2004); and Walker et al., (2004). **Ecological Economics:** the trans-disciplinary field that addresses the relationships between ecosystem and economic systems in the broadest sense. Costanza, (1992), **Deep Ecology:** The branch of ecological philosophy (or ecosophy) that considers a holistic relationship between humans and the natural world and espouses the intrinsic equality of all species. Naess, (1973 & 1989). And **Development Studies:** which is the multidisciplinary social science branch that studies issues related to social and economic development, according to Kothari,(2005).

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