

Environmental Governance in Nigeria: The Community Perspective

Anthony Ikhide Osawe * Ojeifo O. Magnus

Department of Geography and Regional Planning Ambrose Alli University, PMB 14, Ekpoma, Nigeria

Abstract

This study examined the community involvement in environmental governance in Nigeria. The main objectives were to identify prevailing environmental problems in Nigeria and examine the community's participation in its management. To achieve this, a process approach was followed in which secondary data, sourced from text books, articles in journals and the internet were utilized. The study revealed that communities in Africa had little or no role to play in the governance of their environment. The study showed that government alone played this role which has been seen to be ineffective considering the extent of air pollution, oil spillage and deforestation in the urban and rural environments in the continent. On the basis of this, the study therefore recommended among others things that, participatory approach to environmental governance including the government, the private sector; multinationals and the community were required to effectively harness the environment. The study also recommends that policies should be strengthened while environmental education should be a basic requirement for communities.

Keywords: Environment, Governance, Community, Nigeria.

1. Introduction

The ecological system is largest and most complex arena where we live and interact within the biosphere. The biosphere is the thin covering of the planet which contains and sustains living organisms. It consists of plants, trees, aquatic life, insects, micro-organism and people; the hydrosphere (water), atmosphere (air) and lithosphere (rock, and the crust of the earth). We need to understand the interconnectedness of all these to achieve a healthy environment, sustainable livelihood and security. As human beings and individuals, we have responsibility and concern towards the ecological community and are not expected to engage in any activity capable of causing any damage to the earth.

Sub-Saharan Africa is described as a region endowed with diversified natural resource base permitting wide range systems of agricultural production and livestock husbandry in different parts of the region. This natural resource base is suffering from a serious process of gradual degradation which, in some cases, maybe irreversible due to long period of non existence or poor policy. Most of the once abundant wildlife disappeared and agro – pastoral development is constraint by increasing desertification, erratic seasonal rainfall and successive dry spells affecting food and water resources that are critical to livelihood in Africa that has most of its population, particularly the poor that depend on biodiversity. The main causes of natural resource and environmental degradation are rated by the UN as follow: Low rainfall (38%), over cutting (32%), over cultivation (15%), overgrazing (3%) and others, including fires (2%).

The well known maxim, 'think global, act local', stresses the multi-level character of environmental problems in a way that does not even mention the level of the nation state. In as much as there is the challenge of globalization, there is also something like a 'local challenge to the state' in environmental governance? In this contribution we examine the place of the local /community in environmental governance. This paper explores the role of community within a structured global environmental governance system and seeks to respond to four key issues: (1) the role community can play to affect the environment (2) Role of multinational in environmental governance, (3) the rationality for collective action at local or global scale (4) What is the nature of institutional structure needed to manage interdependence and to maximize the opportunities for effective management.

This work is entirely based on analysis of existing published literatures. Information available on different perspectives of environmental governance were teased together from various scholars, relying on opinions from global institutions and some evidences of local roles played by communities in addressing critical issues were sourced from library, and the internet to arrive at the need to provide a space to community in environmental governance.

2. Environmental Governance

Environmental governance refers to the socio-political aspects of making participatory decision over the use and management of natural resources. Environmental governance is concerned with the political and legal rights, regulations and responsibilities of every member of the society – civil society, private sector and the government. Governance', defined broadly, means the norms and decision-making processes by which society and its organisations are controlled and coordinated (MacNeil, et. al., 2003). While governance is habitually associated with official regulation by states, (OECD, 1996), Scholars in the field of legal pluralism are advancing more nuanced understandings that also emphasise the roles of non-state institutions in the market and

civil society in policy-making, norm-setting, implementation, and other aspects of governance (Merry,1988). Scholars such as John Borrows (1995) also stress the role of indigenous communities and their legal traditions as a critical source of social ordering.

It involves social processes, value and norms, cultural ideals and models. Community-based environmental governance constitute different forms and levels of community participation in planning and implementation of decisions concerning the use and management of all forms resources, in both rural and urban environments such as the biodiversity, river system, dry land, coast, oceans and cities.

The poor conservation outcomes that followed decades of disturbing resource management strategies and planned development have forced policy makers and scholars to reconsider the role of community in resource use and conservation. This work vied off from previous work on development which considered communities to obstruct progressive social change, current writing champions the role of community in bringing about decentralization, meaningful participation, cultural autonomy, and conservation (Chambers and McBeth, 1992; Chitere, 1994; Etzioni, 1996). But despite its recent popularity, the concept of community rarely receives the attention or analysis it needs from those concerned with resource use and management.

The process of economics and social development and the consequent generation of economic wealth are without doubt both natural and environmental- they are resources intensive. Equally significant is the expanding pace of socio-economic transformation, in the name of 'globalisation' in developed and developing countries as direct contributors to the systematic depletion of natural resources such as land, water and air, and with the phenomenon of soil erosion, desertification, oil pollution, poor and inefficient management of solid waste/sewage disposal, household refuse, and the invasion of water ways by water hyacinth and dumping of toxic waste. Environmental governance therefore, refers to the processes of decision-making involved in the control and management of the environment and natural resources. International Union for Conservation of Nature (IUCN), define Environmental Governance as the 'Multi-level interactions (i.e., local, national, international/global) among, but not limited to, three main actors, i.e., state, market, and civil society, that interact with one another, whether in formal and informal ways; in formulating and implementing policies in response to environment-related demands and inputs from the society; bound by rules, procedures, processes, and widely accepted behaviour; possessing characteristics of "good governance"; for the purpose of attaining environmentally-sustainable development' (ICUN 2014).

3. The Community and the Environment

The concept of community as a group that shared norms and common interests depends strongly upon the perceptions of its members; in this sense all communities are imagined communities. It is this imagined sense of community that attracted scholars of conservation to community. It is this notion of community that is supposed to grow out of common location, small size, homogeneous composition, and/or shared characteristics. As Ascher (1999) puts it, community exists among individuals who share "common interests and common identification... growing out of shared characteristics. This "Common and shared" attitude, rather than individual and selfish is what makes successful resource management more likely. In a community, "individuals give up some of their individuality to behave as a single entity to accomplish goals" (Kiss, 1990).

Internalize norms of behaviour among members of communities can guide resource management outcomes in desired directions. It should also be recognized that community as shared norms is itself an outcome of interactions and processes that take place within communities, often in relation to those perceived as outsiders. But community as shared norms also has an independent positive effect on resource use and conservation.

It is possible that the existence of communal norms will promote cooperative decision-making within the community which can go a long way to support conservation. The belief of the members of a community in shared identities and common experiences helped in their willingness to cooperate over more formal decisions to manage and conserve resources.

The presence of community-level norms has supported the facilitation of resource management by preventing certain behaviors, or encouraging others (Coleman, 1990).

3. Environmental Factors for Governance

3.1 Soil deterioration: The livelihood of the poor depends strongly on soil, and any damage done to soil and land leads to deterioration which reduces its capacity for capturing, storing and recycling water, energy and food. The United Nations Conference on Environment and Development, Rio de Janeiro (1992) Alliance 21 in its Proposal Paper "Save our Soils to sustain our societies" made the following propositions:

- include soil rehabilitation as part of conventional and popular education
- involve all stakeholders, including policymakers and authorities, producers and land users, the scientific community and civil society to manage incentives and enforce regulations and laws
- establish a set of binding rules, such as an international convention

- set up mechanisms and incentives to facilitate transformations
- gather and share knowledge;
- mobilize funds nationally and internationally

3.2 Climate Change

Climate change is a global challenge of the 21st century whose gravity is multidimensional, unpredictable, indiscernible but global in magnitude. Climate change is resulting from human activities and related greenhouse gas emission being continually understood to be responsible for global warming. It has been pretty difficult to regulate the way and manner different group carries out their activities, which in turn impact differently on the environment. Climate change has become a threat not just to the socio-economic activities to any particular nation but to human existence. There has been increasing actions in order to mitigate climate change and reduce its impact at national, regional and international levels (Onuoha, 2010). Kyoto protocol and United Nations Framework Convention on Climate Change (UNFCCC) plays the most important role in addressing climate change at an international level (UNCED, 1992). But after two decades of the Brundtland Report, however, there has been no improvement in the key indicators that were highlighted (WCED, 1990).

3.3 Biodiversity

Environmental governance relating to biodiversity has to act in many levels because it is threatened by almost all human actions. Therefore, promotion of conservation of biodiversity, require agreements and laws to regulate agricultural activities, urban growth, industrialization of countries, use of natural resources, control of invasive species, the correct use of water and protection of air quality. In other words, any regional or country level decision must consider its implication for biodiversity. Population growth and urbanization is a great contributor for deforestation (WCED, 1990). Also, population growth requires more intense agricultural areas use, which leads to deforestation of new areas. This causes habitat loss, which is one of the major threats for biodiversity. Habitat loss and habitat fragmentation affects all species, because they all rely on limited resources, to feed on and to breed (Steffan-Dewenter & Tscharntke, 2000)

3.4 Water

The 2003 UN World Water Development Report claimed that the amount of water available over the next twenty years would drop by 30%. At that time, 40% of the planet's inhabitants did not have access to the minimum necessary for basic hygiene. Over 2.2 million people died in 2000 from diseases linked to contaminated water, or from drowning (Pelayo, 2009). In 2004, the UK's WaterAid charity reported that one child died every 15 seconds from water-linked diseases. According to Alliance 21 considered "All levels of water supply management as necessary and independent. The integrated approach to the catchment areas must take into account the needs of irrigation and those of towns; jointly and not separately as is often seen to be the case.... (UNCED, 1992). The governance of a water supply must be guided by the principles of sustainable development" and must involve communities.

3.5 Agriculture

The need to increase food production without excessive use of synthetic chemical, conversion of natural habitats or degrading marginal lands. Food situation is such that the world has 800 million people that are malnourished; 25 billion tons of top soils are lost annually, while 1.5 – 2.5 million hectares of irrigated farm land have been lost to agricultural production due to salinization. Doubling of food requirement was done through irrigation over twenty-five years ago; the next effort to increase food production is expected to be more difficult (FAO, 2012; FAO, 2003).

4. Institutional Policies for Environmental governance

At the global level a number of actors are involved in environmental governance and according to Eliot (1956) a range of institutions contribute to and help define the practice of global environmental governance. The idea is to govern the environment at a global level through a range of nation states and non state actors such as national governments, NGOs and other international organisations such as UNEP (United Nations Environment Programme). Global environmental governance is the answer to calls for new forms of governance because of the increasing complexity of the international agenda. It is perceived to be an effective form of multilateral management and essential to the international community in meeting goals of mitigation and the possible reversal of the impacts on the global environment. However, Eliot opined that 'a precise definition of global environmental governance is still vague and there are many issues surrounding global governance', to which he argues that "the congested institutional terrain still provides more of an appearance than a reality of comprehensive global governance." This is an indication that there are too many institutions within the global governance of the environment for it to be completely inclusive and coherent leaving it merely portraying the

image of this to the global public. Global environmental governance is about more than simply expanding networks of institutions and decision makers. It is a political practice that reflects, constitutes and masks global relations of power and powerlessness.

On the other hand, State agendas exploit the use of global environmental governance to enhance their own agendas or wishes even if this is at the detriment of the vital element behind global environmental governance which is the environment. Elliot states that global environmental governance "is neither normatively neutral nor materially benign." Newell, (2008) as reported by The Global Environmental Outlook noted that the systems of global environmental governance are becoming increasingly irrelevant or impotent due to patterns of globalisation such as; imbalances in productivity and the distribution of goods and services, unsustainable progression of extremes of wealth and poverty and population and economic growth overtaking environmental gains. He states further that, despite such acknowledgements, the "managing of global environmental change within International Relations continues to look to international regimes for the answers."

5. Community Role and Responses

Comparable to more general works on community, the history of community in environmental governance is also a history of revisionism. Images of pristine ecosystems and innocent primitives yielded over time to views of despoiling communities out of balance with nature, essentially due to the interference of the state and market. Efforts to reintegrate community in the governance of their environment often meet with resistance and attack by new anthropological and historical research which suggests communities may not, after all, be as friendly to the environment. The practical and policy implications that accompany these changing images are immense (Agrawal, 1999). The basic elements of earlier policy and scholarly writings about local communities and their residents are familiar. "People" were an obstacle to efficient and "rational" organization of resource use (Eckholm, 1976). A convincing logic undergirded the belief that the goals of environmental governance and the interests of local communities were in opposition; governance required guidelines for the protection of threatened resources: wildlife, forests, pastures, fisheries, irrigation, and drinking water. Members of local communities, however, rely on these resources for their fodder, fuel wood, water, and food and thus exploit them without restraint. This schematic representation, popularized by Garrett Hardin and bolstered by several theoretical metaphors that served to (mis) guide policy, provided a persuasive explanation of how resource degradation and depletion took place (Ostrom, 1990).

Empirical evidence about the context within which most rural communities are located helped prop up the view. The population of many rural areas in tropical countries has grown rapidly, even with outmigration to cities.

In Lappe, et.al. (1989), it was argued, that demographic growth could only increase consumption pressures. Penetration by market forces, which linked local systems of resource use to a larger network of demand, further increased the pressure on natural resources (Agrawal, et. al., 1997). At the same time, many believed that poorly articulated and enforced property rights arrangements provided disincentives for individuals to protect resources.

These factors implied that even if people had successfully managed resources in some harmonious past, that past was long gone. Instead, the way to effective conservation was through the heavy hand of the state or through the equally heavy, if less visible, hand of the market and private property rights. Such ideas supported conservation policies that aimed to exclude the community. National parks and other protected areas are the most obvious result of this thinking. International conservation agencies backed many of these policies (Fairhead, et. al., 1994).

While many of these beliefs persist, new beliefs have entered the picture, not all who think about the role of community in resource use have begun to subscribe to new views. The result is a as complex mosaic of notions about how villages or other non urban groups may be connected to the resources upon which they depend. The ensuing lines on community in conservation attempt to pick on the most important beliefs that depart from earlier themes. An enormous outpouring of literature bears witness. See Bhatt (1990), Ghai (1993), Gurung (1992), and Lowry and Donahue (1994). Most of the current ideas about the community's role in conservation have changed radically: communities are now the locus of conservationist thinking. 14 International agencies such as the World Bank, IDRC, SIDA, CIDA, Worldwide

Fund for Nature, Conservation International, The Nature Conservancy, The Ford Foundation, The MacArthur Foundation, and USAID have all "found" community. They direct enormous sums of money and effort toward community-based conservation and resource management programs and policies. A good of scholarly papers and policy-centric reports also feature community-based management (e.g., Arnold, 1990; Clugston and Rogers, 1995; Dei, 1992; Douglass, 1992; Perry and Dixon, 1986; Raju, Vaghela and Raju, 1993; Robinson, 1995). Exemplifying the swing toward community, a recent collection of essays on community-based conservation tells us, "Communities down the millennia have developed elaborate rituals and practices to limit of take levels, restrict access to critical resources, and distribute harvests" (Western and Wright, 1994, p. 1). 15

A host of other more specific factors have aided advocates of community-based conservation.

The development of global norms for good governance, global environmental stewardship, and social equity has been expressed in the Earth Charter and Local Agenda 21 (Mason, 1999; UNDP *et al*, 2003). It was the Earth Charter that brought about the connection of local activities with global environmental impacts and participation with good environmental governance with social justice and ecological sustainability (Corcoran, 2005).

The World over, has historical evidences of the role of community-based organisations (CBOs) process in environmental governance is well documented in *Agenda 21* UNCED, (1992); Edwards and Gaventa, (2001). They have been organised in form of cooperatives and committee, quasi-traditional institutions working at community levels in Africa, Asia, and Latin America and with emergent models from other continents. Notwithstanding the difference in cultural, political and environmental settings community – based groups have political, economic and ecological challenges – environmental degradation, global market force, poor government and technological support. While CBNRM have been adopted in various resources management and Brown *et al*, 2002; Egan and Ambus, 2001 confirm that it strives where human basic needs, such as forest resources, ecosystem that provide a variety of plant and animal food sources and shelter, clothing, tools artefacts for self-sufficiency and even trade. It has worked for mining and co-management between state and local people. The concept of ‘ladder of participation’ by Armstien (1969) has eight power relations in different forms of community relation and participation: manipulation of citizens, therapy-style relations, simple information provision, seeking views through consultation, engagement for the purpose of placation, partnerships, delegated power, and primary control by citizens.

The Armstien model was criticised being too simplistic and one-dimensional though it has been usefully applied to CBNRM. It has similarity with Pretty (1995) environmental typologies, with seven steps but with diminishing degree of powers for members of the community, namely self-mobilisation, interactivity, functional participation, participation for material incentives, consultation and manipulative participation. In all, the focus has been on the structural relation and interaction between state agencies and informal groups. This often have a classification of level of participation along a define scale ranging from de-concentration, devolution and decentralisation of state powers to co-management and autonomous communal management as postulated by pomeroy, (1995); Motsamai & Ntlafalang Consultants (2003).

A framework in Australia that could be relevant to many countries without traditional or specific regulation or statute was developed by Ross *et al* (2002) for CBNRM. This model has accommodated management issues like ‘collective tenure for multiple uses’, ‘community collective activity’ (voluntary monitoring and stewardship group) organised interest group (ENGOs, farmers’ and conservationist bodies), Composite stakeholders bodies (tripartite – industry, government and community; community-Catchment management committees, shared /co-management (joint e.g. Indigenous-State, management of national parks, and stakeholders planning /negotiations (specific purpose short-term).

There is a consensus that community-based model of environmental governance is characterised by flexible, experimental and complex set of relationships. There is a growing acceptance on partnership basis state-community control (Richards 1997); private companies, stakeholders, NGOs, international organisations, and multilateral agencies have become significant actors in influencing Community’s role in resources management.

Finally, community based models for natural resources management are not self propelling to achieve environmental or social sustainability but are driven by cultural norms, political and economic situation to define social and ecological efficiency. For instance, Gibson *et al* (2003) emphasis the role of monitoring and sanctions for social rules, so also are the needs and integrity of the people, community and their environment, and a commitment to the relative autonomy of local governance.

6. Conclusion and Recommendations

Progress in CBNRM will largely depend on the nature and type of role assigned to the community. A participatory process, routed on substantive democratic will bring out the latent skill, determination and energies of community members to achieve a constructive, collective social goal for ecological sustainability. We have to strongly advocated education to prevent pollution, reduce waste, use water, energy and other resources efficiently, manage use of natural resources prudently, and maintain diversity of life. All these can be achieved when we commemorate, protect and respect the world’s natural, cultural, indigenous and historical heritage; support for environmental education and training and adequate support for local action community participation. The essence and need to adhere to further innovation are provided by approaches such as perm culture, plan s such as community ecosystem trust (CET) and Earth Charter and eco-spiritual movements will make a strong difference. Community should be seen in a broad sense as distinct from the stereotype connotation as a local focus of incorporate global citizen, and a steward of the planet. This will provide robust environmental governance with sustainable development

Reference

- Agrawal, A. (1999), Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development Vol. 27, No. 4, pp. 629 -649.*
- Agrawal, A. and Yadama, G. (1997), How do local Institutions Mediate Market and Population Pressures on Resources? Forest Panchayats in Kumaon, India. *Development and Change 28 (3), 435, No 65.*
- Armstien, S. R. (1969), "A Ladder of Citizen Participation" *Journal of the American Institute of Planners, 35, 216 – 24*
- Ascher, W. (1999), "Why Governments Waste Natural Resources' Baltimore: *John Hopkins University Press.*
- Barbara, G., Ivanova, M. and Chee, Y. L.(2002), "Designing a New Architecture for Global Environmental Governance." World Summit for Sustainable Development Briefing Papers, International Institute for Environment and Development (IIED), London. Available from: http://www.poptel.org.uk/iied/test/searching/ring_pdf/wssd_21_international_environmental_governance.pdf. Accessed 13-11-2014.
- Bhatt, C. P. (1990), The Chipko Andolan: Forest Conservation based on People's Power. *Environment and Urbanization 2, 7-18.*
- Borrows, J. (1995), 'With or Without You: First Nations Law (in Canada)' 41 *McGill Law Journal* 629.
- Chambers, R. E. and McBeth, M. K. (1992), Community Encouragement: Returning to the Basis for Community Development. *Journal of the Community Development Society 23 (2), 20-38.*
- Chitere, O. P. ed. (1994), Community Development: Its Conceptions and Practice with Emphasis on Africa. *Gideon S. Were Press, Nairobi.*
- Clugston, R. M. and Rogers T. J. (1995), Sustainable livelihoods in North America. *Development 3 (Sept) 60-63.*
- Coleman, J. S. (1990), Foundations of Social Theory. *Harvard University Press, Cambridge, MA.*
- Corcoran, P. B. (2005). (Editor) Towards a Sustainable World: The Earth Charter in Action. *Amsterdam: KIT Publishers.*
- Dei, G. J. S. (1992), A Forest Beyond the Trees: Tree cutting in Rural Ghana. *Human Ecology 20 (1), 57-88.*
- Douglass, M. (1992) The Political Economy of Urban Poverty and Environmental Management in Asia: Access, Empowerment and Community based Alternatives. *Environment and Urbanization 4 (2), 9-32.*
- Eckholm, E. (1976) Losing Ground: Environmental Stress and World Food Prospects. W.W. Norton & Co., New York.
- Edwards, M. and Gaventa, J. (2001) (Editors) *Global Citizen Action*. London: Earthscan.
- Egan, B. and L. Ambus (2001) When There's a Way, There's a Will, Report 2 : Models of Elliot, L. (1956), Global Environmental Governance, in Hughes, S. and Wilkinson, R. (eds), *Global Governance: Critical Perspectives*, London: Routledge, ch. 4, pp. 57
- Esty, D. C. and Ivanova, M. H. (2003) *Globalization and Environmental Protection: A Global Governance Perspective*. Yale Center for Environmental Law and Policy, New Haven, CT
- Etzioni, A. (1996). Positive Aspects of Community and the Dangers of Fragmentation. *Development and Change.*
- EarthPulse (2010) State of the Earth 2010", *National Geographic*, p72.0
- FAO-Food and Agriculture Organisation, (2012). *Forestry Resource Assessment and the State of World's Forests*. FAO: Rome, Italy.
- FAO. 2003. *World Agriculture Towards 2015/2030: An FAO Perspective*. Rome/London, FAO / Earthscan Publishers.
- Gareau, Brian J. (2013) *From Precaution to Profit: Contemporary Challenges to Global Environmental Protection in the Montreal Protocol*, Yale University Press.
- Ghai, D. (1993) Conservation, Livelihood and Democracy: Social Dynamics of Environmental Change in Africa. *Osterreichische Zeitschrift fur Soziologie 18, 56-75.*
- Gurung, B. (1992) Towards Sustainable Development: A case in the Eastern Himalayas. *Futures 24, 907- 916.*
- International Union for Conservation of Nature (IUCN), 2014.
- Ives, J. D. and Messerli, B. (1989) *The Himalayan Dilemma: Reconciling Development and Conservation*. Routledge, London.
- IUCN 2007 'Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management' viewed 28 May 2014, cmsdata.iucn.org/downloads/In250507_ppguidelines.pdf
- Kiss, A. ed. (1990) *Living with Wildlife: Wildlife Resource Management with Local Participation in Africa*. The World Bank, Washington DC.
- Lappe, F. M. and Shurman, R. (1989) *Taking Population Seriously*. Earthscan, London. MacNeil, M., Sargent, N. N. and Swan, P. (eds), (2003) *Law, Regulation and Governance*. Oxford University Press.
- Lowry, A. and Donahue, T. P. (1994) *Parks, politics, and pluralism: The Demise of National Parks in Togo.*

Society and Natural Resources 7, 321-329.

Mason, M. (1999) *Environmental Democracy: A Contextual Approach*. London: Earthscan.

Mefe, G., Ehrlich, A. and Ehrenfeld, D. (1993) Human population control: The Missing Agenda. *Conservation Biology* 7 (1), 1- 3.

Merry, S. (1988) 'Legal Pluralism' 22 *Law and Society Review* 869.

Motsanmai, B. and Ntlafalang Consultants, (2003) Situation Assessment of Participation of Civil Society in Environmental Assessment in South Africa. Windhoek: South African Institute for Environmental Assessment.

Nelson, A. (2010) Environmental Governance: in International Encyclopaedia of Public Policy. Vol. 4 Social, Environmental and Corporate Governance. Edited by Philip Anthony O'Ohara.

Newell, P. (2008). The political Economy of Global Environmental Governance. *Review of International Studies*, 34, pp 508

OECD, (1996) *Reforming Environmental Regulation in OECD Countries*.

Onuoha, F. C. (2010) Climate Change, Population Surge and Resource Overuse in Lake Chad Area: Implication for Human Security in the North-East Zone of Nigeria in Donald Anthony Mwiturubani and Jo-Ansi Van Wyk 's Climate Change and Natural Resource Conflicts in Africa.

Oreskes, N (2004), "Beyond the Ivory Tower", *Science*, vol. 306, no. 5702, pp, 1686

Ostrom, E. (1990) *Governing the Common: The Evolution of Institutions of Collective Action*, Cambridge. Cambridge University Press.

Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press.

Pelayo, G (2009). Environmental Governance; Prepared for Wikipedia, the free encyclopedia 3.12.2009.

Perry, J. A. and Dixon, R. K. (1986) An Interdisciplinary Approach to Community Resource Management: Preliminary Field test in Thailand. *Journal of Developing Areas* 21 (1), 31- 47.

Pernetta, JC & Elder, DL 1992 Climate, Sealevel rise and the Coastal zone: Management and Planning of Global Changes, *Ocean and Coastal Management*, vol. 18, pp- 113-160.

Pomeroy, R. S. (1995) "Community-Based and Co-Management Institutions for Sustainable Coastal Fisheries Management in Southeast Asia" *Ocean and Coastal Management*, 27, 3, 143 – 62.

Pretty, J. N. (1995) "Participatory Learning for Sustainable Agriculture", *World Development* 23,8, 1247 – 63.

Raju, G., Vaghela, R. and Raju, M. S. (1993) Development of People's Institutions for Management of Forests. Ahmedabad, India: Viksat, Nehru Foundation for Development.

Robinson, M. (1995) Towards a new Paradigm of Community Development. *Community Development Journal* 30 (1), 21-30.

Ross, H., M. Buchy, W. Proctor (2002) "Laying Down the Ladder: A Typology of Public Participation in Australia Natural Resource Management", *Australian Journal of Environmental Management*, 9, 4, 205 -17.

Sampford, C 2002 'Environmental Governance for Biodiversity' *Environmental Science & Policy*, vol. 5, pp. 79-90.

Steffan-Dewenter & Tscharrntkae, (2000) 'Butterfly Community Structure in fragmented Habitats' *Ecology Letters*, vol. 3, pp. 449-456.

UNCED, (1992) Agenda 21, United Nations Conference on Environment and Development, Geneva: UNEP.

UNDP, UNEP, WB and WRI. (2003) *World Resources: 2002 – 2004: Decision for the Earth Balance, Voice and Power*. Washington DC: World Resource Institute.

United Nations Conference on Environment and Development (1992) , Agenda 21, Chapters 23-32, Rio de Janeiro 1992.

United Nations Environmental Programme, (2014), "National University of Ireland UNEP. Conference on Strengthening Transboundary Freshwater Governance – The Environmental Sustainability Challenge", UNEP, viewed on 31/5/14,

Western and Wright, 1994, p. 1.15 cited in Arun Agrawal in *Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation*

World Commission on Environment and Development -WCED(1990), *Our Common Future*, Australian edn, Oxford University Press, Melbourne, p.85.