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## **Analysis of insecurity shocks and farmers' resilience in the Niger Delta Region, Nigeria**

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### **Abstract**

The study assessed the shocks from insecurity and farmers' resilience in the Niger Delta, Nigeria. The region has recorded several security challenges and unrest which adversely affected the economy of the country having a high unemployment rate of 24%. This particularly has affected farmers resulting to a decreased agricultural productivity. The insecurity issues identified in the study area include: environmental degradation, climate change, poverty, conflicts and crime. Meanwhile, the form of crisis and conflicts include; conflicts between communities and companies over host community status, oil spill compensation, electoral and political violence, violent chieftaincy title struggles, struggles over oil bunkering territories, cult fraternity groups (Icelanders, bush boys, Greenlanders), Insurgent groups (MEND), organised crime and violent accumulation (kidnapping as business, piracy and the most recent is the Niger Delta Avenger group among others. The shocks experienced by the people as a result of security challenges were; high prices of food and other consumables leading to high cost of living in the area, low farm productivity, feeling of weakness, strange, stress, anger, frustration, youth restiveness and so on. With ever increasing poverty rates in the south-south in 2012-2013 periods as 27.70% and 24.40% respectively. Thus, improved agricultural inputs and technology, social protection and the provision of human security are some of the resilient strategies identified. Hence, it was recommended that the government should take adequate measures by providing adequate security for the people especially farmers, also give supports in form of subsidy on farm inputs and financial grants to farmers to increase food production.

**Keywords:** Insecurity, Shocks, Farmers, Resilience, Niger Delta

### **Introduction**

In Nigeria in recent times has witnessed an unprecedented level of insecurity. This has made national security threat to be a major issue for the government and has prompted huge allocation of the national budget to security (Achumba, Ighomereho & Akpor-Robaro, 2013). The Federal Government, in an attempt to tackle the insecurity issues in Nigeria, embarked on criminalization of

terrorism by passing the Anti-Terrorism Act in 2011, installation of Computer-based Closed Circuit Television Cameras (CCTV) in some parts of the country, enhancement of surveillance as well as investigation of criminal related offences, heightening of physical security measures around the country aimed at deterring or disrupting potential attacks, strengthening of security agencies through the provision of security facilities and the

development and broadcast of security tips in mass media (Azazi, 2011). Despite these efforts, the level of insecurity in the country is still high. In addition, Nigeria has consistently ranked low in the Global Peace Index (GPI, 2012), signifying a worsened state of insecurity in the country.

For the last 17 years, the increase in the insecurity in the Niger Delta region has been a nightmare to the nation. This affects both indigenes, foreigners, government, company workers especially those in the oil and gas sector, farmers, and everyone. The consequences of these insecurity issues have contributed to various forms of shocks experienced by the people especially the farmers in the region. Taking definite measures or resilience by governments, individuals and groups become necessary to absorbing the impacts of the challenges resulting from insecurity.

The concept of resilience has been gaining critical mass in academia since the 1960s. It has now become a central paradigm in disciplines such as ecology, possibly replacing sustainability as the ultimate objective of development. In particular in domains where issues of shocks, vulnerability and risks are critical (such as disaster risk reduction (DRR), climate change adaptation (CCA), or even social protection (SP)), the growing influence of the concept of resilience is particularly prominent (International Federation of Red Cross and Red Crescent Societies IFRC, 2012). The concept is rooted in material sciences and ecology, but has also been applied in various social disciplines and psychology. In concrete terms, it is the ability of critical physical infrastructure to absorb shocks. From a psychological point of view, it is the process of adaptation and of developing a set of skills, capacities, behaviours and actions necessary when dealing with adversity (IFRC, 2012). It is also described as the ability of countries, communities, and households to

manage change, by maintaining or transforming living standards in the face of shocks or stresses such as earthquakes, drought or violent conflict without compromising their long-term prospects (DfID, 2011). In order to reduce the effects of shocks from changes in the environment, adaptive measures are employed. So, adapting resilience means identifying where different areas can complement and enhance one another, including disaster risk reduction, climate change adaptation, social protection, working in fragile contexts and humanitarian preparedness and response (Department for International Development (DFID), 2011).

The Niger Delta region of Nigeria until recently has experienced series of unrest that has adversely affected the economy of the area and that of Nigeria as a whole (Omofonmwan & Odia, 2009). Farmers are vulnerable to the effects of shocks from physical and social environments because they suffer huge crop and livestock losses due to insecurity challenges. Majority of those engaged in agriculture are poor and therefore engulfed in serious financial obstacle to escape the vicious circle of poverty (Obamuyi, 2008). A lot of the farmers have resorted in the use of some adaptive measures in order to cope with shocks from insecurity. It is on this background that the study assessed the insecurity shocks and farmers' resilience in the Niger Delta, Nigeria. Specifically the study was designed to identify and analyze:

- i) various insecurity challenges faced by farmers in the Niger Delta region
- ii) various shocks resulting from the insecurity issues in the region
- iii) adaptive measures available to the farmers to cope with shocks from insecurity in the study area.

## **Research Methods**

**Study area :** This study was conducted in the Niger Delta area of Nigeria. The region is situated along the South-South, south-East and south-West of Nigeria in West Africa. Niger Delta is located on the delta of the Niger River and its environs stretching from Old Calabar Kingdom through part of the hinter land to part of the Old Benin Kingdom. The states in the Niger Delta are; Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Ondo, Imo, Rivers States, with an area of 112,000 sq. km, a population of 27 million people, 185 LGA's, about 13,329 settlements (Ichite, 2015). The region has huge oil reserves and a major contributor of crude oil production in Nigeria. The Niger Delta people leads in the production of timber, pineapple and fish, also; cocoa, cashew, cassava, rice, yam, oranges etc and the major occupation of the people is fishing and agriculture (Omafomwan & Odia, 2009).

**Source of Data Collection:** The study mainly reviewed existing literature from journal articles, government briefs and other related publications.

### ***Insecurity challenges in Nigeria***

Security refers to the situation that exists as a result of the establishment of measures for the protection of persons, information and property against hostile persons, influences and actions (Akin, 2008). According to him, it is the existence of conditions within which people in a society can go about their normal daily activities without any threats to their lives or properties. It embraces all measures designed to protect and safeguard the citizenry and the resources of individuals, groups, businesses and the nation against sabotage or violent occurrence (Ogunleye, et al, 2011). According to Igbuzor (2011), security demands safety from chronic threats and protection from harmful disruption. Ajodo-Adebanjoko & Walter (2014), argued that human lives are not secured and thus defined human security as the protection of people from critical and life threatening dangers.

Insecurity on the other hand is described in different ways which it affects individuals. They include; want of safety; danger; hazard; uncertainty; want of confidence; doubtful; inadequately guarded or protected; lacking stability; troubled; lack of protection; and unsafe, to mention a few (Achumba, Ighomereho & Akpor-Robaro, 2013). These different descriptions run into a common reference to a state of vulnerability to harm and loss of life, property or livelihood. Beland (2005) defined insecurity as "the state of fear or anxiety stemming from a concrete or alleged lack of protection." It refers to lack or inadequate freedom from danger. This definition reflects physical insecurity which is the most visible form of insecurity, and it feeds into many other forms of insecurity such as economic security and social security. Achumba, et. al, (2013) viewed insecurity in two ways; firstly it as the state of being open or subject to danger or threat of danger, where danger is the condition of being susceptible to harm or injury, and secondly as the state of being exposed to risk or anxiety, where anxiety is a vague unpleasant emotion that is experienced in anticipation of some misfortune. According to them, a major point about insecurity implied that those affected by insecurity are not only uncertain or unaware of what would happen but they are also not able to stop it or protect themselves when it happens.

Insecurity in this regards is viewed as: not knowing, a lack of control, and inability to take defensive action against forces that portend harm or danger to an individual or group, or what make them vulnerable. They defined 'Vulnerability' as a situation that is not known and not able to face or anticipate. It is also something one may know would happen but would not be able to face. Idiku, Angba & Ushie (2012) listed some of the causes of insecurities as environmental degradation, corruption, poverty, insufficient agricultural development,

poor education and poor health status amongst others. The consequences of the insecurity issues have contributed to various forms of shocks experienced by the people in the Niger Delta region.

**Environmental degradation**

Environmental degradation is a serious challenge faced by farmers in the Niger Delta region. Agricultural activities in the region are displaced for oil production since after the discovery of crude oil in the region. Environmental degradation caused as a result of oil spillage and gas flaring, has brought about a reduction in the fertility of land for agricultural activities, forest and fisheries depletion. Agricultural lands, rivers and forest used for farming, fishing and hunting are now diverted for oil production thereby causing a reduction in the production of agricultural products.

the region. Climate change greatly affects farmers especially because of its environmental effects on agricultural production. This insecurity has made farmers vulnerable to poverty, hunger, unemployment, malnutrition and diseases due to crop failure and reduction in agricultural productivity (Enete & Amusa, 2010). The biophysical effects on agriculture includes the increase in the infestation of pests and weeds, changes in the salinity and temperature of the ocean, physiological effects on livestock as well as crops, change in the characteristics of soil and water and lots more (Khanal, 2009). Also, the socio-economic effects on agriculture include the increase in the risk of crop failure, hunger, food insecurity, migration and general unrest. Both effects results to a reduction in agricultural production and the nation’s revenue.

**Table 1: Misery Index and GDP Growth Rates (GDPGR) in Nigeria, 2005 to 2015**

Year	Misery Index	GDPGR (%)
2005	29.76	3.44
2006	20.54	8.21
2007	18.08	6.83
2008	26.48	6.27
2009	31.24	6.93
2010	34.82	7.84
2011	34.74	4.89
2012	32.12	4.28
2013	37.98	5.39
2014	32.36	6.31
2015	19.50	2.11
Average	28.88	5.70

Source: Adapted from Onuchuku, 2016’s computation from World Bank Online Data Bank

**Climate Change**

The impact of climate change in the region which has alter the pattern of rainfall contributing to high flooding as a result of prolonged rainfall is contributing greatly to crop loses, thereby reducing the revenue earning of the farmers in the region. This has brought about the increase in poverty and hunger in

**Unemployment and Poverty**

The problems of inflation and unemployment are still at alarming rates in the country. On the average, between 2005 and 2015, inflation and unemployment rates were still double digits indicating average of 10.68% and 18.19% respectively (Onuchuku, 2016). The report by the Ministry of Niger Delta Affairs, (2011)

stated that unlike other developing countries, the unemployment and poverty rates in post conflict Niger Delta have become predominant while Joab-Peterside, Porter & Watts, (2012) reported that the average unemployment rate in the Niger Delta region apparently doubled between 2004 and 2008. Outside the urban areas, only 20% of settlements are linked to a national grid of power supply. Oyefusi (2012) reported that unemployment in the region was 24% in 2008, with rates in Akwa Ibom and Bayelsa States reaching 43% and 41% respectively. A striking discovery of the UNDP study was the fact that local government areas with oil facilities are more likely to have significantly higher indices of human poverty.

According to Onuchuku (2016), the average growth rate in the gross domestic product of Nigeria from 2005 to 2015 showed 5.7% with a high average misery index of 28.88. According to him, the economy was growing without employment ie the growth recorded within the period was not inclusive. He further showed that the GDP growth declined to a very low level of 2.11% in 2015, the lowest ever within the period under review. This decline according to him was due to a fall in oil production and prices in 2015. This may have contributed to high insecurity witnessed in the Niger Delta region during the period. According to him, poverty rate in Nigeria using percentage of the population with ₦180 poverty line indicated that in 2010-2011. National poverty rate was estimated at 35.2% of the population and declined marginally to 33.1% in the 2012-2013 period, with a reduction rate of -2.1%. Rural poverty rate was 46.3% in the 2010-2011 period and 44.9% in the 2012-2013 period with poverty rates of 15.8% and 12.6% in 2010-2011 and 2012-2013 respectively. According to him, poverty reduction rate within the period was very slow, with a reduction rate of -2.1%. The poverty rate in the south-south during the period was 27.70% and 24.40% respectively with a

reduction rate of -3.30%. Higher poverty rate is accompanied with crime of different kinds.

**Table 2: Crime index by type in Nigeria**

S/No.	Type of Crime	Index
1	People using and dealing on drugs	71.49
2	Vandalism and theft	76.74
3	Violent crime such as assault, armed robbery and kidnapping	79.74
4	Corruption and bribery	88.36

Source: Adapted from Onuchuku, 2016.

Nigeria has one of the highest and most alarming crime rates in the world (Onuchuku, 2016). Cases of armed robbery, kidnapping, financial scam (419), drug peddling, vandalization, cultism, corruption and bribery as well as other social vices such as prostitution are on the increase due to poverty, hardship and youth unemployment. He further stated that Nigeria is ranked 6<sup>th</sup> with crime index of 74.14 next to Honduras with index of 76.43 in the ranking of 10 countries with high crime index.

**Conflicts in the Niger Delta Nigeria**

A United Nation report in 2007 estimated that there were more than 150 conflicts across the Delta reflecting the fact that by 2005 there was a dizzying and bewildering array of militants groups, militias and cults and over fifty operating military camps are dotted around the creeks. But in 2016, the number and cases of kidnapping and militant groups are so many to count. Ikelegbe, 2006, Langer & Ukoha 2009; Obi & Rustad, 2011; Oyefusi , 2007, 2012) stated that the social field of violence in the Niger Delta encompasses a number of differing agents, actors and dynamics. Some of forms of conflicts and crisis that are commonly experienced in the area as follows:

1. Violent conflicts between oil companies and community youth groups over compensation, employment, and access to cash payments.
2. Conflicts between communities and companies over host community status, spill compensation (or ritual/cultural site desecration) and MOUs (Ugborodu, Soku communities).
4. Vigilante groups (Bakassi Boys)
5. Intra and/or inter community conflicts over rights to oil bearing lands
6. Youth group violence over access to local oil rents and by providing protection services for the oil companies (Nembe)

**Table 3: Conflict Trends in Niger Delta indicating the Motivating Factors and Actors**

S/No	Type of Conflict	Motivating/Causal Factors	Actors of Conflict
1	Intra-Community Conflict	Triggered by disagreement community factions over land, dispute and equitable distribution of oil industry benefits such as scholarships, employment, contract awards, and compensation for damages.	Community factions such as youths, chiefs, urban and local elites, engaged in a struggle for access and equitable share of oil benefits.
2	Inter-Community Conflict	Caused by inter-community struggle over benefits of the oil industry such as award of contracts, employment and payment of compensation.	Community youths and chiefs engaged in a struggle for access and equitable share of oil benefits.
3	Inter-Ethnic Conflict	This caused by inter-struggle for over benefits of the oil industry such as employment, contract awards and payment of compensation for damages, ownership of land, title of traditional rulers and political appointments.	Community youths and chiefs engaged in a struggle for access and equitable share of oil benefits and political leaders.
4	Oil-Company/Community Conflict	Motivated by factors such as delay in the payment of compensation for damage on property, breach of Memorandum of Understanding by the oil companies and the patronage of community factions by the oil companies.	Community youths and chiefs engaged in a struggle for access and equitable share of oil benefits and security personnel invited by the oil companies to maintain order.
5	State-Community Conflict	This is caused by perceived deprivation, neglect and exclusion from the oil wealth.	Youths, chiefs, political leaders, civil society organizations and militia groups.
6	Inter-Cult/Militia Group Conflict	Struggle for supremacy over oil theft/bunkering space.	Youth groups engaged in illegal oil bunkering.
7	Political Conflict	Struggle for access and control of political power.	Armed political thugs, mainly youths and desperate politicians.

Source: Ibaba 2009; Joab-Peteside 2005; Ibaba & Ikelegbe 2009

8. State violence and abuses by security forces (Odi, Odiana, Ogoni)
9. Urban violence/electoral and ward and LGA determination (Warri)
10. Struggles over oil bunkering territories (Cawthorne Channel)
11. Inter ethnic territorial conflicts (Ogoni - Andoni, Warri)
12. Cult Fraternity groups (Icelanders, Bush Boys, Greenlanders).
13. Insurgent groups (MEND).
14. Organised crime and violent accumulation (kidnapping as business, piracy) and the more recent one is the Niger Delta Avenger group.

**Table 5: Inter-community conflicts**

S/No	Communities involved	Causes	Year
1.	Bassambiri and Ogbolomabiri in Bayelsa State	L.G.A. (Location of Headquarters )	1997
2.	Akassa and Koluama	Land dispute	2002
3.	Ogu and Bolou		2001
4.	Ke and Bille Rivers State		2001
5.	Eleme and Okirika in Rivers State	Land dispute	2001
6.	Okirika and Ikwerre	Land dispute	
7.	Ilajes and Ijaws in Ondo State	Territorial/land dispute	1999/1998
8.	Ijaws and Itsekiri's	LGA Creation/ward creation /Territorial/land dispute	2000/2004/ 1991
9.	Andoni and Ogoni	Land	1970/1974/ 1998
10.	Urhobo's and Itsekiri's		1997/1998
11.	Akassa and Egweama		2000
12.	Biseni and Okordia	Land/Oil field	2002
13.	Epebu Versus Emadike	Land	1999/2000
14.	Amabolou and Ayama		2001
15.	Ekeremor and Ogbodobiri	Piracy issue	2004
16.	Okpoama and Ewoama	Chieftaincy	1998
17.	Biogbolo and Yeneizue	Land	2001
18.	Okpoama and Twon-Brass	Land	1999
19.	Oluasiri (Nembe) and Orusangama (Kalabiri)	Territorial/land dispute	1994/95
20.	Oleh versus Olomoro	Oil field dispute	1999
21.	Beletiemia versus Liama	Murder of a woman	1997
22.	Okuruama versus Abuloma	Murder of a woman	2005
23.	Choba Youths versus Wibros	Social amenities	2000
24.	Elekahia Youths versus Nkpogu Youths	Social responsibility	2000
25.	Niger Delta Peoples Volunteer	Resources control, self-determination, convocation of national conference	2004

Source: Adapted from Nengi James's: Contemporary Issues and Realities of the Niger Delta Situation: The Demand of Youths Towards Sustenance of Peace (2005).



According to the National Commission on Refugees, 800,000 Nigerians were displaced between 2000 and 2004 by communal violence, perhaps 200,000 persons in the Niger Delta alone (Watts, 2008). Conflicts in the Niger Delta are a major contribution factor to insecurity in the Niger Delta. According to (Ibaba, 2011), it is discernible that the causes of conflict in the Niger Delta are multidimensional. The report by Ibaba (2009); Joab-Peteside (2005); Ibaba and Ikelegbe (2009) on the conflict trends in the Niger Delta Nigeria, identified types, causes and motivating factors of conflicts in the area as shown on Table 3. Okwechime, (2013) reported that there were several other intra communal crises from 2000 to 2005 that claimed several lives and properties in various communities in the Niger Delta Nigeria.

### 1.8 Shocks, Consequences of Crises in the Niger Delta, Nigeria

Shocks are sudden events that impact the vulnerability of the system and its components. There are many different types of disaster-related shocks that can strike at different levels. These include disease outbreaks, weather-related and geophysical events such as floods, high winds, landslides, droughts or earthquakes. There are also conflict-related shocks such as outbreaks of fighting or violence, or shocks related to economic volatility, such as food prices (IFPRI, 2013). According to UNDP between 1996 and 2002 the Human Development Indices actually fell in the core oil producing states.

There are severe consequences in the social, psychological and behavioural aspect due to insecurities challenges in the Niger Delta (Idiku, Angba & Ushie, 2012). The state of insecurity in an area is mainly responsible to the various attributes an individual may exhibit which includes; the feeling of weakness, strange, stress, anxiety, reduced productivity, reduced work and school performance,

reduced income earnings, anger, and lots more (Idiku, Angba & Ushie, 2012). Frustration and the feeling of being oppressed are also some of the shocks experienced due to insecurity. Most times, these shocks are often acted upon wrongly such as violence with the believe of fighting for justice and thereby securing ones future. Youth restiveness is one of the shocks resulting from insecurity and such insecurity could be poverty, unemployment, poor infrastructural development, poorly implemented programs, ethnic marginalization, government insensitive to the suffering of the people, suffering from environmental degradation, poor educational system, poor livelihood, government sabotage and so on (Oromareghake, Arisi & Igho (2013). They defined restive as unable to be still or quiet, difficult to control especially when one is not satisfied with something. However, youth restiveness has led to disruption of agricultural activities and thus low productivity, ethnic hostilities, fleeing of prospective investors and developers in the region, break of law and order and other criminal act.

### 1.9 Resilience to the Shocks from Insecurity in the Study Area

Resilience has been the focus of a large and growing body of research, seeking to understand which characteristics make a country, community or household resilient, and to establish the principles and processes that strengthen resilience and thus help populations withstand and recover from disasters (DFID, 2011). The Asian Development Bank and the International Food Policy Research Institute (IFPRI) defined resilience as the 'magnitude of disturbance that a system can withstand without crossing a threshold into a new structure or dynamic. In human systems, resilience refers to the ability of communities to withstand recover from stress, such as environmental change or social, economic or political upheaval, while for natural systems, it is a measure of how much disturbance (storms, fire and pollutants) an ecosystem can handle without shifting into a

qualitatively different state (ADB & IFPRI, 2009).

The Intergovernmental Panel on Climate Change (IPCC) recently reinforced this emerging prominence, pointing out: 'Disaster risk management and adaptation to climate change focus on reducing exposure and vulnerability and increasing resilience to the potential adverse impacts of climate extremes'. In this, the appropriation of the concept by bilateral and multilateral donor organisations in relation to humanitarian interventions, climate change adaptation or social protection should be seen as the ultimate evidence of this influence within key players arenas (Bene ., Godfrey., Newsham & Davies (2012).

According to Adegoke., Ibe & Araba, (2014) resilience is the ability of a system to cope with or absorb stress or impacts and bounce back, recover, and adapt to change. They defined agricultural resilience as the capacity of agricultural development to withstand or recover from stresses and shocks and thus bounce back to the previous level of growth. A stress can be defined as a regular, sometimes continuous, relatively small and predictable disturbance. Shock, on the hand, is an irregular, relatively large and unpredictable disturbance, such as is caused by a rare drought or flood. Dr Akinwumi Adesina, Honourable Minister of Agriculture, Nigeria as a special guest in Brussels Development Briefing, organized by CTA in collaboration with the African, Caribbean and Pacific (ACP) Secretariat, the EC/DEVCO, Concord and IFPRI in 2013, defined resilience as the level of susceptibility to the forces of nature.

Resilient agriculture creates agricultural growth out of knowledge, investment and innovation, while simultaneously building the capacity of farmers, particularly smallholder farmers to counter environmental degradation and climate change (Adegoke., Ibe & Araba, 2014). The World Economic Forum (2013)

defines resilience as (i) the adaptability to changing contexts, (ii) the capability to withstand sudden shocks, and (iii) the ability to recover to a desired equilibrium, either to the previous one or a new one, while preserving the continuity of its operations. In general, many measures can be taken to increase resilience, including stimulating investment in smallholder agriculture, fighting food waste, raising agricultural sustainability, improving local and regional market access, and mapping food insecurities.

### ***Building Resilience in Agriculture***

Environmental (climate change) and social (conflict) nature are increasingly creating the necessity to build resilience for households to cope with and bounce back from those shocks (Salord, 2013). It was stressed that developing resilient agriculture will require technologies and practices that will build on agro-ecological knowledge and enable smallholder farmers to counter environmental degradation and climate change in ways that maintain sustainable agricultural growth. Such includes mixed cropping that support more efficient use and cycling of soil nutrients, conservation farming, micro dosing of fertilizers and herbicides, and integrated pest management. These are proven technologies that draw on ecological principles. In Zambia, conservation farming, a system of minimum or no-till agriculture with crop rotations has reduced water requirements by up to 30 per cent and used new drought-tolerant hybrids to produce up to five tons of maize per hectare, five times the average yield for Sub-Saharan Africa. The imperative now is scaling up such systems to reach more farmers.

According to Salord, (2013), another solution is to increase the use of modern plant and animal breeding methods, including biotechnology. These have been successful in providing resistance to various pests of maize, sorghum, cowpeas, groundnuts and cotton; to diseases of maize and bananas; and to livestock

diseases. These methods can help build resilience rapidly. It was further stressed that the need to combine them with biotechnology-based improvements in yield through improved photosynthesis, nitrogen uptake, resistance to drought and other impacts of climate change. Agro-ecology and modern breeding methods are not mutually exclusive. Building appropriate, improved crop varieties into ecological agricultural systems can boost both productivity and resilience. Building resilience means developing strategies that could help individuals, households, communities, regions, and countries cope with and recover from shocks.

Salord (2013) explained that recurrent food crises in the Horn of Africa and Sahel have pushed for longer term approaches to food insecurity and building resilience. Threats to food security have increased over recent years, for instance due to climate change and increased biodiversity loss. Resilience has thus become central to the European Commission's reflection on development, particularly in the context of reducing small producers' vulnerability to food crises. Food security should be achieved in an optic of sustainable agriculture and reducing dependence on unsustainable resources. More generally, effective policy making requires beneficiaries to be actively involved throughout processes.

Hailu, (2013) stressed the importance of building resilience in smallholder agriculture which constitutes over 80% of total agriculture in ACP. He stated that building resilience in agriculture requires improved agricultural techniques and practices such as pest, disease and drought resistant seed varieties; reducing post-harvest losses and food waste; less dependence on non-renewable energy; improving risk sharing and insurance schemes for smallholders; and providing better access to technology and information. Building resilient agriculture will also require long term

strategies and interventions that build on agro-ecological knowledge to enable smallholder farmers to counter environmental degradation and the negative impacts of climate. Adesina (2013), defined resilience as the level of susceptibility to the forces of nature. He highlighted the importance of increasing agricultural production to ensure food security, moving away from dependence from agricultural exports.

The Nigerian government in an attempt address the shocks from climate change challenges constituted a committee that developed a framework on resilience agriculture in Nigeria. The Advisory Committee on Agricultural Resilience in Nigeria (ACARN), formed in September 2013, was mandated to develop framework that was expected to address the following; ensure food and nutritional security, eradicate rural poverty and create social stability, policies and institutions needed to enhance the ability of individuals, households and production systems to recover from the impact of shocks and stresses on the Agriculture sector occasioned by the changing climate (Adegoke., Ibe & Araba, 2014). National Agricultural Resilience Framework (NARF) in response to the need offered a well-articulated national policy on short and long term strategies to reduce food and nutrition vulnerability, while enhancing environmental resilience.

The Nigeria government at that time embarked on a major transformation of its agricultural sector, with the launch of the Agricultural Transformation Agenda (ATA) in 2012 that is anchored on the philosophy of treating agriculture as a business rather than a development program. The goal was to add 20 Million MT of food to the domestic food supply by 2015 and to create 3.5 million jobs. It was aimed at driving import substitution by accelerating the production of local food staples, to reduce dependence on food imports

and turn Nigeria into a net exporter of food. Major innovations introduced include:

First, in 2012 Growth Enhancement Scheme (GES) was launched in Nigeria and it was the first ever database of farmers in the country used as a basis for the efficient and effective distribution of subsidized seeds and fertilizers through mobile phones to farmers. This stimulated wider markets for agricultural inputs, agricultural productivity and food production rose by 8.1 million MT in 2012.

Second, agricultural revolution was complemented with financial revolution. The Central Bank of Nigeria through the scheme established a \$350 million risk sharing facility (NIRSAL) to reduce the risk of lending by banks to farmers and agribusinesses. The facility leveraged \$3.5 billion of lending from banks to agriculture. The interest rates paid by farmers reduced from 18% to 8%. Government also recapitalized the Bank of Agriculture to lend at single digit interest rates to farmers. The programme improved farmers' access to financial resources as a means to improving their farm production ventures.

Third, satellite imagery and remote sensing tools were deployed to better assess the effects of climatic shocks on food production as was the case when the country experienced a major flood in September of 2012, the worst in decades. The perpetuation of evidence based approach to building resilience against such hazards was a major plank of ACARN's future work plan. The weather prediction information helped farmers adjust their planting and harvesting dates as well as make adequate preparations protective measures against floods and prolonged dry season.

Fourth, policies were introduced to encourage the cultivation of drought tolerant crops (e.g. cassava and sorghum) and developed markets for them to enhance resilience in food systems. During the period, a lot of farmers got improved varieties seeds and cultivars through

e-wallet system of seed distribution which increased crop yield.

Fifth, government promoted policies to improve water management. The level of irrigation in Africa is low, as less than 3% of all arable land is under irrigation, compared to close to 50% in Asia. Targeted policies for better agricultural water management include: subsidies for the ownership of motorized pumps especially by women farmers, provision of community loans for the management of water sheds, and provision of subsidies for alternative energy in rural areas to allow the powering of motorized pumps.

Sixth, was to reduce the risk faced by farmers, focus was on scaling up of weather index insurance schemes for farmers. Because many farmers were not able to afford the cost of insurance premiums, subsidies were provided to support farmers and reduce the high fixed cost of development of insurance products by insurance companies. An Area-based flood insurance scheme was expected to be established in areas prone to floods.

Seventh, social safety net policies are being used to reduce vulnerability, especially for women and children. These include conditional cash transfers, school feeding programs and nutritional interventions. The "Saving one million lives" initiative targets the use of community management of acute malnutrition and integrated child feeding to reduce under-nutrition. Regional food reserves are also being supported. In 2012, Nigeria contributed 32,000 MT of grains to support Niger Republic to address food shortages. Although the school feeding programme has commenced but it is yet to start in the Niger Delta states, also the cash transfer programme is on but the youths are the most beneficiaries.

### **Farmers Adaptive Measures to Shocks from Insecurity in the Niger Delta Region**

There are myriads of adaptive measures farmers could employ to reduce insecurity shocks in the Niger Delta region. The resilience methods aimed to provide improved agricultural inputs and technology to farmers would help boost agricultural productivity (Kebede, Haji, Legesse & Mammo, 2016). They include; fertilizers application, use of genetically improve seeds which can withstand the change in the climate, herbicide/pesticides, Irrigation practices, use of extension service to receive up-dates on innovation/information on how to withstand shocks.

Farmers can also boost resilience through social protection. This would help to lessen the impact of insecurity and shock on the farmers. Kebede et al., (2016) explained that social protection in the form of relief could comprise of grains, assistances in cash or kind, oil and pulses. Farm inputs like cassava cuttings, seeds, etc were also distributed to them. Although it was characterized with some errors in distribution.

Also, improvement in the people's access to public goods and services such as access to infrastructure like hospital, school, security, good roads, steady electricity, good marketable outlets, portable water, access to information technology, good transport systems, access to credit and lots more could help build farmer's resilience. Presently, access to infrastructure in the Niger Delta region is still very low because, a lot of farmers in the region cannot afford essential goods and social services because of high price charges.

### **Conclusion**

Insecurity is a major challenge in the Niger Delta Nigeria, some of the forms of insecurity identified include environmental degradation, climate change, poverty, hunger, food insecurity, corruption, violence, conflicts, kidnapping, and vandalism. There is increase

in the risk of crop failure; hunger, food insecurity, migration and general unrest etc. Shocks such as low farm productivity, reduced income earnings, feeling of weakness, strange, stress, anxiety anger, frustration, and youth restiveness, high prices of goods and services accompanied with high household consumption expenditure and low savings are common in the region. Therefore, in order to boost and facilitate economic development especially among farmers in the area;

I) Federal and state governments should adopt more proactive measures in the security of lives and property of individuals especially in the region.

II) Farmers are advised to adopt the use of improved agricultural inputs and new technologies as a resilient strategy to increase food production.

III) Farmers are also advised to adopt mixed cropping that would enhance efficient use and cycling of soil nutrients to increase crop yield.

IV) Also, social protection services in form of subsidy on farm inputs and relief materials should be available to farmers displaced from their farming locations to reduce shocks in the region.

V) Lastly, a well articulated action plan and institutional framework on adaptive measures towards resilience to insecurity shocks should be developed and implemented to support farmers in the region.

### **References**

- Achumba, I, C Ighomereho, O.S & Akpor-  
Robaro, M. O. M (2013). Security  
Challenges in Nigeria and the  
Implications for Business Activities and  
Sustainable Development. *Journal of  
Economics and Sustainable  
Development*. 4(2): 80-99
- Adesina, A (2013). Agricultural Resilience in  
the face of crises and shocks. Brussels  
Development Brief. (30): 1-6 Briefing no  
30.



[https://brusselsbriefings.files.wordpress.com/2007/12/br30\\_highlights\\_eng\\_agricultural-resilience-rev4.pdf](https://brusselsbriefings.files.wordpress.com/2007/12/br30_highlights_eng_agricultural-resilience-rev4.pdf).

Adegoke, J., Ibe, C. & Araba, A. (eds) (2014). National agricultural resilience framework: A Report by the Advisory Committee on Agricultural Resilience in Nigeria. Federal Ministry of Agriculture and Rural Development: Abuja, Nigeria. [http://www.fmard.gov.ng/images/uploads/other\\_media/narf-2014le.pdf](http://www.fmard.gov.ng/images/uploads/other_media/narf-2014le.pdf).

Ajodo-Adebanjoko, A., & Walter, U. O. (2014). Poverty and the challenges of insecurity to development. *European Scientific Journal* 10(14): 361-372.

Akin Ibidapo-Obe (2008). The utility of Close-Circuit Television (CCTV) in Intelligence gathering by security operatives in Nigeria. *Proceedings of conference on intelligent security*, Lagos

Azazi, A. (2011). Responding to the emerging trends of terrorism in Nigeria, *5th Policing Executive Forum Conference Proceedings* organized by CLEEN Foundation, 5-

Beland, D. (2005). The political construction of collective insecurity: from moral panic to blame avoidance and organized irresponsibility, *Center for European Studies Working Paper Series* 126.

Béné C., Godfrey Wood R., Newsham A. & Davies M. (2012). Resilience: new utopia or new tyranny? Reflection about the potentials and limits of the concept of resilience in relation to vulnerability reduction programmes. <http://www.ids.ac.uk/files/dmfile/Wp405.pdf>

Department for International Development (DfID). (2011). Defining Disaster

Resilience: A DFID Approach Paper. London: DFID.

Kebede, T., Haji, J., Legesse, B., & Mammo, G. (2016). Econometric analysis of rural households' resilience to food insecurity in West Shoa, Ethiopia. *Journal of Food Security*. 4(3): 58-67.

Enete, A. A & Amusa, T. A. (2010). Challenges of agricultural adaptation to climate change in Nigeria: a synthesis from the literature. *Enhancing agricultural adaptation to climate change*. (4): 1-11. Enugu, Nigeria: Field Action Science Reort.

Hailu, M (2013). Agricultural resilience in the face of crises and shocks. *Brussels Development Brief*. 30: 1-6

Ibaba, S. I. (2009). Violent conflicts and sustainable development in Bayelsa State." *Review of African Political Economy* 36(122):555-573.

\_\_\_\_\_(2011). Nigeria's Niger Delta: militia violence, amnesty, and energy security, *Peace and Conflict Studies*: 18: 1, Article 2. Available at: <http://nsuworks.nova.edu/pes/vol18/iss1/2> accessed on October 30th 2016.

Ibaba, S. I. & Ikelebge, A. (2009). Militias and pirates in the Niger Delta. Paper Presented at Institute of Security Studies (ISS) South African, Workshop on Militia and Rebel Movements-Human Insecurity and State Crisis in Africa, Pretoria, South Africa, April 20-21

Ichite, C. (2015). Land conflict, population pressure and lethal violence in the Niger Delta 2006-2014. IFRA- Nigeria Working Paper Series No. 48.



- Ikelegbe, A. (2006). The economics of conflict in oil rich Niger Delta region of Nigeria, *African and Asian Studies* 5 (1 ): 23-55.
- Idiku, F. O., Angba, A. O & Ushie, M. E. (2012). Food insecurity challenges and sustainable agricultural development in Nigeria. *OIDA International Journal of Sustainable Development*. 5(10): 25-30.
- Igbuzor, O. (2011). Peace and Security Education: A Critical Factor for Sustainable Peace and National Development, *International Journal of Peace and Development Studies*. 2(1): 1-7.
- International Federation of Red Cross and Red Crescent Societies (IFRC, 2012). The Road to Resilience: Bridging relief and development for a more sustainable future. <http://www.ifrc.org/PageFiles/96178/1224500-Road%20to%20resilience-EN-LowRes%20%282%29.pdf>
- Joab-Peterside, S. (2005). On the Militarization of Nigeria's Niger Delta: The Genesis of Ethnic Militia in Rivers State." *African Conflict Profile* 1(2):30-51.
- Joab-Peterside, S., Porter, P & Watts, M (2012). Rethinking Conflict in the Niger Delta: Understanding Conflict Dynamics, Justice and Security. Niger Delta; Economics of Violence. Working Paper. 26: 1-35
- Khanal, R. C. (2009). Climate change and organic agriculture. *Journal of Agriculture and Environment*. 10: 100-110.
- Langer, A. & Ukiwo, U. (2009). The problem of militancy and violence in the Niger delta. CRISE Working Paper, Oxford University.
- Ministry of Niger Delta Affairs (2011). Federal Republic of Nigeria. Retrieved from <http://MNDA.gov/ng/resources/download-resources>.
- Oromareghake, P., Arisi, R. O. & Igho, O. M. (2013). Youth restiveness and insecurity in Niger Delta: a focus on Delta State. *Global Journal of Human Social Science Political Science*, 13(3).
- Obi, C. & Rustaad, S (eds) 2011. *Oil and Insurgency in the Niger Delta*. London: Zed Press.
- Obamuyi, T. M. (2008). Barriers to Entrepreneurship Development in the Indigenous Communities of Western Niger-Delta, Nigeria. International Council for Small Businesses World Conference . June 22-25, 2008. ICSB World Conference Congress Mondial.
- Odjugo P. O. (2010). General overview of climate change impacts in Nigeria. *Journal of Human Ecology*, 29(1): 47-55.
- Ogunleye, G.O., Adewale, O.S., Alese B.K. & Ogunde, A.O. (2011). A Computer-Based Security Framework for Crime Prevention in Nigeria, A Paper presented at the 10th international conference of the Nigeria computer society held from July 25th -29<sup>th</sup>.
- Okwechime, W (2013). Environmental Conflict and Internal Migration in the Niger Delta Region of Nigeria. Paper presented at the ESF-UniBi-ZiF research conference on 'Tracing Social Inequalities in Environmentally-Induced Migration', Center for Interdisciplinary Research, Bielefeld, Germany, December 09-13, 2012. Accessed from [www.uni-bielefeld.de/tidrc/ag\\_comcad/downloads/WP\\_119.pdf](http://www.uni-bielefeld.de/tidrc/ag_comcad/downloads/WP_119.pdf) on October 30<sup>th</sup> 2016
- Omafomwan, S.I. & Odia,L.O. (2009). Oil exploitation and conflict in the Niger-



Delta Region of Nigeria. *Journal of Human Ecology*, 26(1), 25-30.

Onuchuku, O (2016). War of supremacy between unemployment and inflation in Nigeria: who is the actual loser? University of Port Harcourt Inaugural lecture Series No. 133 Delivered on 28th July, 2016 at the University of Port Harcourt. Rivers State Nigeria.

Oyefusi, A. (2007). Oil and the propensity for armed struggle in the Niger Delta region of Nigeria. *Post Conflict Transitions Papers No. 8 (WPS4194)*. Washington, D.C.: World Bank.

Oyefusi, A. (2012). *Wealth Sharing Arrangements for Conflict Prevention and Economic Growth Nigeria Case study on Linkages between Natural Resources Extraction and Conflict*, consultancy report, The World Bank: Abuja.

Salord, D. (2013). Agricultural resilience in the face of crises and shocks. Brussels Development Brief. 30: 1-6

Watts, M (2008). Petro-insurgency or criminal syndicate? Conflict, violence and political disorder in the Niger Delta. Niger Delta Economies of Violence Working Paper 16: 1-36. Accessed on October 30<sup>th</sup> 2016 from [geog.berkeley.edu/ProjectsResources/NigerDelta/...](http://geog.berkeley.edu/ProjectsResources/NigerDelta/)