PDF - ANALYSIS OF EFFECT OF FLOOD ON LIVELIHOODS AND ADAPTATION MEASURES OF SMALLHOLDER CROP FARMERS - researchcub.infoABSTRACT

This study evaluated the effect of flood on farm families inDelta State. It specifically described the socioeconomic characteristics ofsmallholder crop farmers in the study area, identified the causes of floods inthe study area, evaluated the economic effects of flood hazards on smallholdercrop farmers, examined the vulnerability of smallholder crop farmers' familiesto floods in the study area and identified adaptive strategies for mitigatingthe negative effects of floods on smallholder farm households. 180 smallholderfamers were randomly drawn from 12 communities that covered six localgovernment areas including; Oshimili South, Ndokwa East, Ughelli North, Udu,Isoko North and Patani local government areas. Data were collected from bothprimary and secondary sources and analysed through the use of both descriptiveand inferential statistical tools. The result shows that over 51% of therespondents were females while majority (57,78%) of them were within the agebracket of 20 to 59 years and 70.56% were married.Over 87% of the respondentshad one form of formal education or the other while themean household size was8 persons with most of the farmers (76.66%) having farm sizes of 1.0 hectareand bellow. The identified causes of flooding in the area included long hoursof rainfall, type of land use pattern, dumping of refuse into water channels,lack of and poor drainage networks, topography, nature of urban land surfaceand building types, and stream basin parameters. Lack of drainage network inthe disposal of flood water is believed to be a major factor substantiallyworsening flooding in the study area. More than 27% of houses of sampledrespondents collapsed during the 2012 flood in the study area while about (43%)suffered health problems. The results of the regression analysis of the effectsof socioeconomic variables on vulnerability to flood hazards showed thatsavings, membership of ROSCAS, farm output and income had negative andstatistically significant effect on vulnerability while Dependency Ratio ispositively signed and statistically significant at the 5% level. Thus,vulnerability to flood event is highly reduced as savings, membership of ROSCAS,farm output and level of income of the smallholder farmers increase while theopposite is the case when the dependency ratio increases. Measures to reducethe risks of flooding in their area were identified as river re-channelisation,raising foundation of houses flood water level the use of sand bags as leveesto keep away flood water. It is recommended that early warning of floodingbased on climatic variability will help people in flood prone areas to prepareahead of time. Also construction and improvement of drainage networks toeffectively dispose flood water will go a long way in reducing the risks offlooding.

CHAPTER ONE

INTRODUCTION

1.1 BackgroundInformation

Today, global climate change is one of humanity's greatestchallenges. According to the International Resource Group (2008) global warmingwill increase within the next fifty (50) years to the detriment of the world'spopulation. Weather extremities such as droughts, floods and cyclones willoccur more frequently and forcefully, causing insecure living conditions, foodshortage and forced migration. The current cycle of rising temperatures isunique. For the first time, the actions of human beings are responsible fordecisively changing a cycle that is typically a natural phenomenon.

Apart from mitigation, adaption represents the secondinsurance strategy to first, protect vulnerable populations alreadyexperiencing adverse effects of climate change and secondly, protect all peoplein the future. Therefore, adaptation to existing climate change is essentialfor all countries. Political scientists and

the policy-making community havebegun to explore potential consequences of climate change, especially fordeveloping countries, describing it as a stress factor with the potential toadd to existing development, security and health problems (InternationalResource Group, 2008).

Inequality in capacity to adapt to climate change isemerging as a potential force widening disparities in wealth, security andopportunities for human development. While developed countries with adequateresources are in the process of adapting to climate change, it is the countriesin the developing world that are facing extreme and more immediate burdens andadverse impacts of changes in global climate. According to research, developingcountries in tropical and subtropical regions will face some of the strongestnegative consequences of climate change, thus primarily and adversely impactingthe most vulnerable people globally (International Resource Group, 2008).

Flood is unusual accumulation of water. A disaster might becaused by a natural or man-made phenomenon resulting in a significant physicaldamage or destruction, loss of life or drastic change to the environment. It isa terrible occurrence that is capable of being harmful to life, property,economic and social welfare of people (Cherdpong and Thiengkamol, 2013). Thecoastal plains or flood belt are often more vulnerable to flood disaster inDelta State. With the advent of climate change phenomenon, the effect of floodshas been devastating in the flood belt of Delta State, Nigeria. The 2012 flooddisaster in some parts of Nigeria, including Delta State is a case worthy ofreference.

The dimensions of the effect of flood can broadly be groupedinto direct and indirect. Social effect of flood may manifest in the forms ofloss of homes, loss of social status, education of children/wards andpsychological trauma of the victims. Other direct effects are loss of farmincome, social infrastructures (schools, markets, roads, and healthfacilities), loss of means of livelihood, loss of farm lands andcrops/livestock's. Indirect effects of flood may reflect in the form of burdenon safe communities in the hinterland and food shortages, increase in prices offood stuff. Other dimensions of effects of flood disaster include: foodinsecurity, poverty, psychological trauma, loss of human capital, politicalunrest and a drain on government budget (Cherdpong and Thiengkamol, 2013).

The overall effect of flood disaster is that it retards andreverses development. It may hinder productive investment. A key issue fordeveloping countries including Nigeria is the lack of capacity of farminghouseholds to mitigate flood disaster (Abaje and Giwa, 2007).

The smallholder farmers that dominate the population ofDelta State, produce small output, with scanty resources, earn low income andlow purchasing power. About 70% of thewhole population depends on their aggregate output. According to Cruz (2010)majority (more than 80%) of the small holder farmers in the world depend onfarming as their primary source of livelihoods. Three out of every four poorpeople leave in rural areas and depend on agriculture, either directly orindirectly for their livelihood (World Bank, 2008). Consequently, flood hazardson farming households will have spillover effect on those that depend on them.

In most parts of the world, and particularly in thedeveloping countries such as Nigeria, food security and its related issues arevital welfare issues that occupy central focus in global economic debates.Attainment of food security is core problem confronting rural farminghouseholds due to low productivity. The changing climate pattern and its effecton agriculture pose a serious food security and livelihood challenges to therural farm families in Delta State, Nigeria. The United Nations estimate hasprojected that over the next 20 years the demand for food will increaseastronomically. Ash, et al. (2007) reported that yields from Africa's rain-fedfarm production may decrease by 50% due to climate change hazards such asflood, by 2020.

Previous studies demonstrating correlations between floodhazards and poverty status among vulnerable rural farm families have generatedconsiderable interest (Meza et al, 2008). The body of literature hasaccordingly pursued three main directions with respect to climate hazards andlivelihood status of vulnerable rural farm families:

* close linkbetween flood and farm output (Meinke and Stone, 2005)
* vulnerabilityof rural communities, which lack economic resources and capacity to mitigateflood hazards, and
* the needfor agronomic

and economic models that can capture relevant variables foradaptation policies and practices (Maza, et al, 2008).

Agronomic and economic models of flood hazards indicatethat, over time, adaptive use of seasonal climate forecast could provide somebenefits (Ash, et al. 2007), especially with respect to vulnerable farmers (Letson et al, 2005). Hansen et al.(2009) demonstrated that high value could be attained from accuratepredictability of flood hazards.

The main purpose of estimating flood response model is tointegrate the relevant variables in flood hazards management decision making.It is important to investigate how vulnerable rural farm families and others inthe flood belt make use of flood hazards forecast information in theirlivelihood decision making (Roncoli, 2006).

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