



## Participatory Rural Appraisal of Basic Needs Deprivation among Rural Dwellers of Borno State, Nigeria

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### Abstract

Inadequacy of environmental and infrastructural resources to satisfy basic needs results in deprivation among rural people which in most cases, rapid rural appraisal and other traditional survey methods rarely adequately capture. This paper employs therefore employs participatory rural appraisal (PRA) techniques to analyse these phenomena in Borno state. The objectives are to determine the seasonality of basic needs deprivation, analyse the triggers of need deprivation, and, assess the coping strategies for deprivation. PRA techniques employed are Seasonal Calendar and Force Field Analysis and 300 systematically selected participants from 9 local government areas were the study frame. The findings are that basic need deprivation is an outcome of environmental scarcities, resource capture, and failure of socioeconomic infrastructure. Episodic drought, flood, and conflict over resources triggers loss of farm harvest and livestock hence food, income and other needs there from. The coping strategies include wild food foraging, migratory fishing and praying to God which lead to the conclusion that basic needs satisfaction among the studied rural dwellers in Borno state is below societal expectations. Recommendations for improvement were proffered.

**Keywords:** Basic needs, rural deprivation, seasonal calendar, force field analysis, participatory rural appraisal, Borno state

### Introduction

Differential access to environmental resources needed to satisfy basic needs determines which communities and individuals suffer deprivation. Indeed deprivation of basic needs is similar to when fundamental right of an individual is denied, inability to satisfy these needs is one of the causes of protracted conflicts (Nortrup, 1989). A study in Britain (Thompson, 2000) defined “necessities” which were as those things that everyone should be “able to afford and which they should not have to go

without”. Some very basic needs as defined by Abraham Maslow (Doyal and Gough, 1991) include physiological needs, safety needs, belongingness and love needs, esteem needs and self actualization.

Doyal and Gough (1991) observe that though there is variation in needs, every individual aim to satisfy the very basic ones. Basic needs can be classified into three. These are basic consumption goods such as food, clothing and shelter, which everyone must not be left without; basic services such as health services, potable water, transportation and communication infrastructure that facilitate socioeconomic integration; and, the freedom and

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empowerment to make decision in aspects that affect their lives (Burton (1990); Rothman (1997)).

Participatory rural appraisal (PRA) as contemporary rural research methodologies have been discussed by authors including Nel *et al.* (1997); Doyle and Krasny (2003); Olawepo (2003); Conroy, (2005); Roncoli, (2006) among others. The key areas of PRA techniques are participation, decentralization and empowerment (Chambers, 1997). Decentralization means that resources and discretion are devolved, turning back inward and outward flows of resource and people. Empowerment means that the deprived are enabled to take more control over their lives and secure a better livelihood with ownership and control of productive assets. Participation enabled rural dwellers to actively contribute their input to programmes that affect their livelihood opportunities.

PRA being a bottom-up approach to development is in consonance with agenda 21 of the World Commission on Environment and Development to facilitate sustainable development. This perhaps is what informed Olawepo (2003)'s statement that sustainable development might mean the end goal of our rural environment. Basic principles of PRA according to Bhandari (2003) are imperative to stimulating exchange of knowledge and experience between rural dwellers and outsiders. Livelihood analysis which is central to understanding how rural communities respond to environment and social change (Scoones, 1998) focuses on the relationship of institution to local resource availability and access, and the resulting choice made at the local level (Eakin *et al.*, 2006). The PRA techniques used in this study are discussed as part of methodology.

### Study area

Borno state with an area of 69,435 sq Km and lies within longitudes 12° and 15° E and latitudes 10° N and 13° N (Ijere and Daura, 2000) was created in 1976. According to the

Federal Republic of Nigeria Official Gazette, (2007) the population of the state was 4,151,193. There are twenty-seven local government areas (LGAs) (Ijere, 1993) in the state, ecological problems that affect ability of rural dwellers to satisfy basic needs include drought, desertification, (Thambyahpillay, 1991; Online Nigeria, 2003 c; Adebayo, 2010).

Drought increases the vulnerability of farmers to crop failure and death of livestock in the drought endemic areas of Bomo North (Gadzama, 1993 & 1995; Gworgwor 1993; Akinbolu, 1993; Adefolalu, 2002). In the extreme north, rainy season lasts for less than 80 days but about 140 days in the extreme south (Ijere and Daura 2000). Majority of the indigenous people who are Kanuri, Babur, Bura, Fulani and others are rural dwellers deriving livelihoods from farming, fishing, livestock rearing and other primary activities on (Ayuba *et al.*, 2003).

### Method of study

The primary sources of data for the study were PRA methods such as Focus group discussions; Transect Walks: Seasonal Calendars and Force field Analysis. Separate FGD sessions were conducted with different groups such as farmers, herders, fishers, biomass resource users, workers in wage employment, community opinion leaders, etc. and their contributions were carefully recorded before bringing all the groups together to brainstorm on deprivation of basic needs as it affects the whole community. Transect walks were systematic walks with key informants through areas where environment-provoked deprivation are most evident. Examples include areas of infertile soil, areas devastated by pest and diseases, and areas affected by flood, and storm and so on. These were complemented with observing, asking, listening and identifying problems and possible solutions in different zones (Nel *et al.*, 1997; Chambers, 1991).

Seasonal calendar was used to get the picture of typical years and identify points where basic needs are threatened. Historical matrix was appropriate in obtaining information on coping strategies in crisis periods (Chambers, 1997). It has been used in a study in Senegal to understand how people cope in crisis such as locust invasion, drought, rat invasion, and fire in a village (Freudenberger, 1995). Seasonal calendars were drawn in participation with the rural dwellers. In the final analysis, because of similarities in these calendars, they were compiled and summarized into one. Force Field Analysis was employed using a local game “*Na daya a tapa...*” (Firstly, we touch...) which is a variant of “Tug of war”.

To draw participants, 30% of the 27 LGAs that is 9 LGAs were systematically selected. These LGAs are Bama, Chibok, Damboa, Hawul, Konduga, Kukawa, Kwaya-Kusar, Mobbar and Monguno. From the selected LGAs, fifteen settlements were selected. In each settlement, twenty (20) adult participants were purposively selected such that a total of three hundred (300) participants were selected across the studied LGAs. Hausa was the medium of expression and field assistants competent in Kanuri, Fulfude and Bura were employed as interpreters during the focus group discussion. Socioeconomic attributes are presented in tables while trend description, seasonal calendars and force field analysis were employed in discussing other components.

## Discussion of findings

The findings are discussed in different subsections including socioeconomic characteristics of the participants, characteristics, and structure of basic need deprivation and strategies for coping with basic needs deprivation.

### Socio-demographic characteristics of participants in PRA techniques

The socioeconomic attributes include age, tribal, educational and occupational

attributes of the participants. These are further examined.

**Table 1: Age distribution of participants in PRA techniques**

Age (yrs)	Frequency	%
21-30	29	9.6
31-40	59	18.7
41-50	69	23
51-60	62	20.7
Above 60	84	28
Total	300	100

Source: Field survey, 2008-2009

As revealed in Table 1, majority of the participants were above 60 years which constitute about 28%. These people are obviously older and were able to contribute meaningfully to the discussion. Age bracket 41-50 years was also higher (23%) among the discussants. Participants between ages 21-30 years were 9.6% while those between 31- 40 years were 18.7%. Muslims were however 70.7% while Christians were 29.3%.

**Table 2: Tribal characteristics of participants in PRA techniques**

Tribal characteristics	Frequency	%
Kanuri	132	44
Mafa	26	8.7
Babur bura	66	22
Fulani	37	12.3
Kibaku	10	3.3
Others hausa, tiv	31	10.3
Total	300	100

Source: Field survey, 2008-2009

Table 2 shows that 44% of the discussants were Kanuri by tribe. Most of these were from the settlements in Borno north followed by Babur-Bura found mainly in settlements in Kwaya Kusar and Hawul, Chibok, and Damboa LGAs of southern Borno. Fulanis are found in both Borno north and south and they constitute about 12.3% of the participants. Kibaku, Hausa, Tiv, Jukun, Ibos *etceteras* scattered in several rural settlements across the study area.

**Table 3: Occupational distribution of participants in PRA techniques**

Occupations	Frequency	%
Farming	128	42.7
Herding	25	8.3
Fishing	17	5.7
Artisanal	10	3.3
Agro-pastoralism	62	20.7
Agro fishing	28	9.3
Farming artisanal	12	4
Others	18	6
Total	300	100

**Source:** Field survey, 2008-2009

As described in Table 3, farmers constitute (42.7%) of the participants followed by agro-pastoralists (20.7%). Other occupational categories were herding (8.3%), fishing (5.7%). Although, artisans were 3.3%, those that depended on artisanal and farming activities were 4%. Generally, farming with other primary activities is common and this partly explains the critical influences of environmental factors on the occupational activities for basic needs options of the sampled population.

### Basic needs deprivation

Basic needs deprivation reflect intricate web of political ecology, resource capture, environmental scarcities and failure of social and infrastructure provisioning in rural areas. See the Seasonal Calendars and Force Field Analysis. The sampled settlements in northern Borno are constrained by continuous decline in rainfall, soil nutrient deficiency, rising hot weather conditions, pests and diseases of crops and livestock. Southern Borno is however constrained by variation in heavy and low rainfall (alternate flood and drought conditions), rugged terrain, soil nutrient loss and diseases and pests of crops and livestock.

For instance, food and income of pastoralists are seriously affected in the production-consumption domain when reduction in feed and water for cattle lead to diseases and death among livestock depriving pastoralists of cattle, sheep and goat flocks. Also, the same applies for the artisans dependent on

*gamba* grasses and trees for “Zana” mats used as screens in houses and locally wood-carved stools locally called “*kujera*”. According to the mat makers, the *gamba* grass is reducing consistently due to reduced rainfall making them to travel longer distance to get these grasses. According to the mat makers in settlements across Monguno LGA, their ability to meet the societal standards of basic needs (three square meals per/day, bicycle, children educational needs and other social consumptions) is undermined. Reduced biomass stocks also affect cooking energy and building materials for rural households.

In Yimirshika and Kukrupiya (Hawul LGA) and Kwada (Chibok LGA) in Borno South, rural dwellers claimed that excess rainfall led to flood that washed away their homes and farms. Suddenly, dry spells which lasting three to four weeks set in to cause crop failure. According to the discussants, this led to about 200% inflation in food prices. During the floods, their houses, household properties and livestock were also lost. Transect walks at Kadauri and Fulatari (Mobbar LGA) Kawuram (Monguno LGA) and Gurori (Konduga LGA) in Borno North revealed the devastating effects of Quella birds that coupled with drought and infertile soil led to crop failure. These intensified conflicts among farmers and cattle rearers, consequently the food and income.

At Alau Logeri (Konduga LGA) and Kwatan Tulari (Kukawa LGA), increasing drought affect surface water which has reduced volume and varieties of fish-stocks thus aggravating resource conflict, reduced income and food of fishing households. Related to this is water where the major source of domestic water supply is shallow wells and streams. Declining farm productivity, reduced livestock/fish production, diseases and infection, and somatic-physiological discomfort are effects of reduced water resources.

Infrastructural facilities necessary for satisfaction of basic needs include

electricity, potable water, medical facilities, and road, credit and loan facilities because they facilitate and economic opportunities. At Monguno LGA, rural dwellers in Kolon Kura, Bore hole, Kawuram had no access to electricity. Also at Chibok and Kukawa LGAs, several villages far from the local government headquarters were without electricity. Some of these include Kautikari, Kwada, Hierpaya, Takulashi, Kwatan Tulari, Musari, Awasari, and others. Absence of electricity in these villages reduces access to several non-farm opportunities and liveability of rural environment.

Lack of electricity make many of them travel to head quarters to recharge their mobile phones or pay to those using electric generator for commercial purposes. This has also increased the cost of milling grains used as food. The grain miller use diesel-fuelled Lister grinding machines and charge N20 per “*Tia*” of grains. The poor rural peasants (particularly women) consider it prohibitive which could be reduced if there is electricity.

Healthcare facilities are located far from many rural dwellers. Most of the primary healthcare facilities where rural dwellers obtain health services are located mostly in headquarters of the LGAs. As a result, only the settlements located not far from these head quarters have considerable access. During the FGD, it was gathered that average distance is about one hour working distance. For instance it takes thirty minutes on motorcycle to get to hospital at Chibok from Kwada, and it costs N500.00<sup>2</sup> to and from. This is because footpaths link these settlements. Also in Kwantan Tulari (Kukawa LGA), the nearest hospital is at Baga which is about thirty-five minutes on a motorcycle with a cost of about N400.00.

The discussants also revealed that the cost of obtaining service is high and only prescription is given while the patients get the medications and drugs from patent

medicine stores. Also the pastoralists claimed that lack of timely access to livestock drugs and veterinary services are some contributory factors to loss of livestock. As summarized by a key informant, the head of Fulatari village in Bama LGA. “During extreme cold conditions when cattle and sheep suffer pneumonia infection, if there were drugs to counter the ailments; we would not have been deprived of our livestock and the benefits from them”.

Constraints associated with inadequate transport facilities are lack of roads or dilapidated roads, lack of adequate vehicle and high fares charged by the available few; high cost of obtaining health services and essential goods, high cost of transporting farm produce to markets, and high fare charged by the commercial motorcycles. Mobility is generally fairly good during periodic market days and generally better during the dry season.

#### **Coping strategies for basic need deprivation**

According to the officials of Ministry of Environment, efforts to combat the ecological threat from drought and desertification are; tree planting campaign that is done from time to time both in symbolic and practical ways. People are encouraged and advised to plant trees on their farms and around their settlements. Another effort is enlightenment on soil management practices that preserve vegetation and increase the soil moisture content on farmland. People are educated to leave stumps of millet, guinea corn and maize stalks on their farmland to hold soil together during the long dry season.

In conflict linked to environmental resource scarcities, conflicts among farmers are usually resolved through the traditional authorities like the *Lawans* (village heads) *Hakimis* (District heads), and, law enforcement agencies like the police force. In Kukawa LGA, conflicts among fishermen and between farmers and pastoralists are

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<sup>2</sup> 160 Naira is equivalent to 1 US Dollar.

settled by the police force and the Military Joint Task Force on Border Patrol (JTFF). A combination of traditional authorities, law enforcement agencies have been used, adopting both conventional and alternative conflict resolution approaches. Also, to reduce conflict pastoralists, a key informant, the deputy director, livestock department of Borno State Ministry of Agriculture reveals that the grazing land for pastoralists are continuously been demarcated and preserved. This is known as “*Butali*” and there are many gazetted graze land for cattle rearers. Moreover, water points for cattle are created in several areas.

Destruction from flood and fire disasters and windstorm are some of the incidents considered as “emergency” desirous of intervention by the Borno State Relief Agency. In rural areas, fire disasters (locally called *Gombara*) occur on two phases: farmland areas and domestic areas. Several posters and fliers in different local languages are circulated by the Emergency Relief Agency as enlightenment measure to prevent fire incidents.

Flood events are spatially concentrated in Borno South whereas all the rural areas across the state experience deprivation from storm. Flood phenomena usually attract state intervention in terms of relief materials such as distribution of roofing materials, clothes, food stuff and other domestic items to the affected rural dwellers. When the issue of spatial spread of the intervention and assistances are considered, it was revealed that only those who reported are assisted based on the list submitted by the local authorities such as village and district heads working together with the different local government councils.

In terms of electricity, power supply to rural areas is done in phases. The first is the provision of power generating plants to rural communities under the Rural Electrification Board (REB) scheme. This usually is collaboration between the State government and local government councils. However,

only the local government headquarters and few rural settlements benefit. The local government councils supply the fuel, service and maintain the generating plants. Once a LGA is linked to the national grid, the generator is transferred to another local government area.

Apart from public policy intervention, adaptive strategies are developed from indigenous knowledge (I.K) and indigenous practices (I.P) which are both outcomes of several years of dealing with the environment. Coping strategies evolved from two major ways; (1) autochthonous invention and modification which are developed by succeeding generations, and (2) spatial interaction engendered by human mobility and cultural transfer between people of similar livelihood characteristic. In rural areas of Borno State, adaptation to mitigating basic need deprivation can be examined under two major aspects; livelihood adaptive strategies and societal adaptive strategies.

Livelihood adaptive strategies are strategies employed to improve rural livelihood (farming, fishing, livestock rearing, lumbering) and other socioeconomic activities from where basic needs are sourced. Generally these strategies are referred to in the local languages as “*Dabara*” which literally means “solutions” emphasizing the wise use of environment to ensure access to basic needs. In areas constrained by rugged and stony terrain in Borno south, terrace farming and ‘soil on rock’ planting are employed.

Terrace farming is a common practice in settlements found in hilly areas where farmers plant their crops on terraces (steps) that have been cut to prevent rapid soil loss, water loss and loss of nutrient from the skeletal soils on the hills. In this manner rural people have been able to plant both food and cash crops. Soil on rock planting is a very recent adaptation in areas where rock fragments cannot support crops. In these areas of Hawul and Chibok LGAs, the

strategy is to arrange rock fragments, collect these fragments and put soil on these rock fragments. After these, seeds are planted. The wisdom is that the volcanic rock fragments are rich in nutrients that support crops. Development of plant roots further enhances the physico-chemical disintegration of rocks to increase the volume of soil. In these areas common hoes or cutlass cannot be used rather special axe-like hoes and sledge hammers are used for physical (manual) breaking of smaller rocks by farmers. The only adaptation to soil infertility is the use of animal waste to improve soil nutrients. In rural areas close to urban centres, solid wastes are packaged in bags and sold to farmers. To cope with Quella birds, farmers employ children to chase the birds away for a fee. Alternatively they mount scarecrow on their farms.

Among the cattle rearers, an adaptation is to change the feed of cattle from grasses to leaves from trees. This adaptation becomes necessary to survive the long dry season. Fulani and Bororo cattle rearers lop tree branches and the leaves are fed to livestock. Among the farming households that keep livestock, crop residues are used as feed during the dry season. These residues include shells of groundnut, beans and other leguminous crops. Leaves of cereal crops are turned to hay to feed animals meanwhile chaff of grains such as maize, millet and guinea corn, beans, and rice husks are also used for livestock feeds.

Another livelihood adaptation among cattle rearers is ethno veterinary, a traditional way of using local biomass for livestock therapeutic purposes prevalent among a community. For livestock diseases such as contagious Bovine Pleuro Pneumonia; tissue culture rinderpest, black quarter and anthrax, livestock keepers employ leaves and roots of herbs for treating animals. Another strategy is herd-splitting where herds are reduced to forty to fifty heads so that management will be easy. The Fulani claimed that it helps spread resources exploitation and utilization

over a wide area rather than a local concentration.

Among fishing households, majority change their fishing gears to catch more than their co-fishers. Ultimately, majority of the fishermen in fishing settlements found in Kukawa LGA migrate to Chad to fish or diversify their employment opportunities during the period when fishing activities are not very intensive.

Societal adaptive strategies are coping mechanisms evolved from series of social and communal interaction among rural people. Among the adaptive strategies to mitigate individual weakness and vulnerability are communal labour and resource-sharing. Communal labour is used in constructing and maintaining roads and footpaths that link settlements. A lesser form is age-group labour used in building house, building temporary tents and kiosks for commercial purposes. Through this, people save more cash which could be used for other basic needs. Age group labour is particularly used in repairing houses ravaged by flood and storm.

When financial emergency arise, borrowing is another strategy to ameliorate income deprivation. Poor yield and harvest heightens food insecurity hence rural people combine wild-food collection and borrowing grains from households with surplus. Usually, it is paid back after the harvest of new crops. Cash borrowing is usually to fulfil medical and social consumptions needs. Another strategy is seeking assistance from religious institutions. This assistance is rendered to mitigate situations like infections and health issues, flood disaster, fire disaster and other catastrophes.

To ease transport needs, motorcycles are used by men while bicycles are becoming important with women and girls in rural areas of Chibok and Damboa LGAs. These women who are mostly Christians use bicycles as a means of going to farms, markets and hospitals as well as other social

functions. Praying to God is major psychological (fatal) coping strategy among rural dwellers. All the people claimed that after praying to God, their supplications are answered and their living conditions are improved.

Migration is the last coping strategies and people move out to Chad, Cameroon, and Niger Republic to engage in primary activities or to urban centres to engage menial jobs. Migration is a common strategy which happens seasonally or as condition

demands. As the last resort, it reduces the local pressure on resources and holds a hope of improved quality of life on return compared to dismal living conditions in rural areas.

As revealed in the Seasonal Calendar, rainy-months are end of August to early October in Borno north while it lasts till end of October in Borno south except for highland areas (such as Biu). This makes water problem to be a major environmental constraint for better part of the year.

Month	Atmospheric conditions	Basic Needs Deprivation	Coping activities
January	Cold-dry; Harmattan	Diseases of livestock and poultry: Shortage of food and water.	Off farm jobs ;fishing; wild-food/food collection, borrowing from friends; herding; migration
February	Cold-dry; Harmattan	Livestock and poultry infections; Food and water shortage	Irrigation, migratory fishing in Chad and Benue rivers, wild fruits and foods; herding
March	Warm-dry	Human ailments; rashes, fever, water scarcity; fire disasters	Wild fruit harvest, biomass harvest, herding.
April	Warm-dry;high temperature	Fever, rashes, dysentery water problems	Migration, wild food and biomass harvest, herding
May	Hot-dry; very high temperature	Fever, rashes, Cerebro spinal meningitis (CSM), dysentery; Acute water shortage	Bush burning, fishing, herding, off-farm employment.
June	Hot-dry; very high temperature	Acute water shortage	Herding, fishing irrigation activities.
July	Hot-dry; cloudiness (coolness)	Acute water shortage	Fishing, irrigation activities.
August	Hot-wet cloudiness & rain shower in Southern Borno	Windstorm conflict over farmland *Drought condition	Return migration farmland clearing planting of crops.
September	Cold-wet (in south); warm-wet (in north); Peak of rainfall in Borno state.	Effect of windstorm sporadic flooding in Borno south Cessation of rainfall	Peak of agricultural activities in North & South herding, fishing wetland farming.
October	Warm-wet; cold-wet variable rainfall in north and south	Flood episode; effect of windstorm; crop pest & disease farm/herder conflict	Biomass/grass harvesting; herding, fishing, wetland farming.
November	Cold-dry; On set of dry season	Water shortage (in north) conflict over resources.	Peak of fishing. Harvest of crop herding



December	Cold dry; Harmattan	Water shortage	End of harvest, fishing, (CiRani) migration, Biomass harvesting
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**Figure 1: Seasonal calendar of basic needs deprivation and livelihood activities**

Source: Field survey

### Force field analysis

The peak of dryness and heat are associated with health burdens such as fever, rashes, dysentery and other illnesses. Rainy season (August-October) is usually characterized by flooding and windstorm that deprive rural dwellers of some of their basic needs of life. For instance, flood ravages farmland or sweep away harvested crops awaiting transportation to farmers' houses. Windstorm blows away rooftops of houses thereby depriving rural dwellers of shelter and protection. Shops, market stalls and workshops are also affected depriving rural dwellers of means of non-farm earnings.

These months are also associated with pests and diseases of crops and livestock that reduce the quality and quantity of agricultural yield and livestock produce. These major shortfalls affect livelihood opportunities of rural people. Apart from pest and diseases, conflict over farmland, wet lands, water resources, graze land and other environmental resources occur. This ruptures social relationship in addition to bodily injuries and destruction that characterize these conflicts especially when they are violent. These challenges pose enormous constraints to rural dwellers well being and reinforce deprivation.

Varieties of livelihood strategies are adopted by rural residents depending on the seasons and months of the year. For the long dry season, fishing and pastoral activities go on among the people on a low level. Wild foods and fruits are also harvested to augment diminishing household food reserves. In places where these opportunities are absent, migration typifies as "*Cirani*" or "*Bude Ido*" is the last resort. As revealed in Force Field Analysis (Fig. 1), of all unmet needs, lack of water, reduced crop harvest, inadequate

financial capital and effect of diseases and pests constitute the severest basic need deprivation followed by poor health services. However ailments, inefficient transport facilities lack of adequate productive input and destruction of farmland by flood are causes of deprivation while the last issue of deprivation relates to death of livestock and poultry and reduced number of fish catch.

Among coping strategies, long and short term of rural out-migration and praying to God are considered most important. Borrowing money and food from neighbours and collecting wild foods are the second most important strategies. Pooling communal labour and cooperative resources together is the third important strategies used in farming and other aspects where labour is needed like maintaining wells, roads and footpaths linking settlements. Relief package from government is also placed in third category. According to rural dwellers, relief package has never gone round those who suffered basic need deprivation.

Using organic manure to improve soil fertility is on the fourth level because it is not readily available and few people could actually use it. Due to great need for capital and other input irrigation agriculture cannot be used by generality of the people and it is placed on fifth rank while rain water harvesting is considered sixth. Use of insecticides and herbicides to cope with diseases and pest, cover cropping and terrace farming to cultivate rugged, topography are the last set of coping strategies. These are not popular and generalized and are based on financial strength or hilly nature of the terrain.

## Conclusion, implication and policy recommendation of the study

This paper examined basic need deprivation among rural dwellers using force field analysis, seasonal calendar and transect walk. The PRA methodologies were employed with 300 participants from rural settlements across 9 LGAs in Borno state. Basic need deprivation varies based on ecological peculiarities of the rural areas. Basically shortage of food and food-related needs; water; house and other material assets as well health needs are where deprivation is felt. These are consequences environmental scarcities and public policy failure.

The coping measures for basic need deprivation are policy intervention and societal adaptive strategies that have varied mitigating effects. Looking at the arrow showing the direction of pull, the general conclusion is that basic need deprivation felt by rural dwellers outweigh the available adaptive and institutional mitigation strategies. It is apparent that rural dwellers experience disadvantages in several domains of life. Basic need deprivation as experienced by people is widespread and diverse across the study area.

Several recommendations emerging from this study are pinpointed: The findings have theoretical, academic, and planning implications that can help to further the attempt at improving quality of life at the local level. Theoretically, it corroborates previous theoretical standpoints that physical environmental elements have a strong influence on rural life. The PRA framework shows that outsiders can learn from indigenous knowledge. For example "soil on rock" planting is perhaps peculiar to rural settlements studied. It shows that learning with and from the local people can actually contribute to contemporary knowledge on survival strategies in rural settlements and environmental sustainability.

Policy makers should vigorously execute policies that improve the socio-economic wellbeing of rural people by addressing the peculiar environmental challenges of both northern and southern Borno. For instance drought and desertification in extreme north requires a different approach from the flood ravaging farmlands and houses in the extreme south with rugged terrain. In the same vein, conflict resolution agencies should be sincere at dispensing justice on environmental resources-related conflicts. On several occasions rural disputants accuse local authorities of favouritism and deliberately perverting justice.

Provision of infrastructural facilities in the sampled rural areas will facilitate actualizing basic needs sustainability. Access to adequate potable water, electricity, transport and health care-facilities are in this direction. There is also the need to encourage self-help activities among the rural dwellers in infrastructure provision. With self-help, life-improving community development projects can be provided by using home town development associations.

To ensure adequate involvement of rural dwellers in all mitigation strategies, bottom-up participatory approach that will be prompt, responsive, and inclusive should be adopted. Participatory involvement of local people reduces feelings of helplessness, vulnerability and alienation that are key factors that aggravate basic needs deprivation.

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