Vulnerability Poverty Assessment in Bombali District: The PAR Approach in Three Chiefdoms

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Abstract

Sierra Leone is faced with the massive task of not only rebuilding the physical structures in the devastated communities but reactivating and empowering social institutions to the extent that the communities themselves will take the lead in managing their own developmental activities. Bombali District was one of the epicenters of the post-war vulnerabilities. Achieving food security in Sierra Leone has been a major concern of government and the international community in the post-war reconstruction. It is therefore, necessary to get a good understanding of its status in various districts, in order to design well-targeted poverty alleviation programmes. A study was therefore conducted in six villages of three chiefdoms in the Bombali District using participatory action research (PAR). Formal dialogues and focus group discussions at the district and village/town levels in conjunction with semi-structured interviews (SSIs) and questionnaire administration to respondents provided useful insights into the household vulnerability. Responses at all levels indicated that village households were vulnerable to food insecurity, and have poor access to social services. Need for food, money and clothing were 3 major priorities in all villages. Major household coping strategies were demanding government support to alleviate food insecurity, traditional patron-client relationship, eating less and drinking more water (100% in Bari, Markeh, and Makerembe) and changing patterns of eating habit. The investment strategies of respondents were similar: educating children and maintaining good health. The prevailing conditions of exposure to risks and crises inextricably reduce their ability to mitigate the existing problems. Attempts to diversify their ability to function through community organizations and networking will improve formulation of alternative livelihood strategies.

Key Words: Vulnerability, Food Security, Participatory Action Research, Livelihood improvement, Bombali District

INTRODUCTION

After eleven years of civil war, Sierra Leone is not only faced with the massive task of building the physical structures in the devastated communities but also with reactivating and empowering social institutions to the extent that the communities themselves will take the lead in managing their own developmental activities. During the war the communities became mere recipients of handouts from donors. Immediately after the war and following the 2001 national anti-poverty campaign to overcome food insecurity in Sierra Leone, the Ministry of Agriculture and Food Security (MAFS) planned a programme for provision of subsidy and services to needy farmers (MAFS, 2001).

To improve the effectiveness of such anti-poverty interventions at the individual, household and local/community levels (MAFS, 1999), it is necessary to update the poverty profile and to broaden and deepen the understanding of poverty dimensions. Vulnerability analysis is a powerful tool for understanding the food security situation. It makes researchers to focus on
economic aspects, social aspects (gender, ethnic, and other differentials), environmental aspects (natural and manmade disasters, hazards, and impact of climate change), and on the institutional aspects (policy, planning, and coping strategies or mechanisms for ameliorating such vulnerability) (Pritchett et al, 2000; Sen, 2002).

During the war the communities became mere recipients of handouts from the relief packages. By the end of the war in 2002, the situation changed as a result of the following factors:

Massive repatriation exercise enhanced and guaranteed the return of people to their communities

The democratic elections paved the way to restoration of civil authority in the country.

The war was officially declared over.

Institutions and/or organizations were revitalized for needs assessment, capacity building in concomitant with national, regional and local action initiatives for poverty alleviation, enhancement of human security, and a stable and sustainable development.

The country started to enjoy relative peace and the needs of the people were no longer limited to securing daily sustenance. The communities desired to move forward from post conflict recovery to sustainable development. Soon Sierra Leone became the “Mecca” for humanitarian work, attracting expatriates from all over the world. These expatriates, though armed with the rightful facilities and qualification for such work, either lack the socio-psychological experience germane to the successful implementation of their technical interventions, or are too small for the volume of technical intervention needed by the country. It is against this background that the vulnerability poverty analysis (VPA) is conducted in three Chiefdoms (six villages) of Bombali District to triangulate the available field-level information that forges amenable recommended actions for improvement of the coping mechanisms. On the other hand, it is envisioned that government initiatives have not addressed adequately the risk reduction strategies, and the local as well as international non-governmental organizations (NGOs) may not have the required structures in place to support the initiatives. This eventually may lead to far-reaching consequences of greater impact of risks and crises on children, women and other identified vulnerable groups in the specified study areas.

Communities should be allowed to identify the problems and the risks they face themselves. Participatory risk mapping (PRM) which is a variation on participatory action research (PAR) has been developed and applied successfully to identify the differences in risks faced by pastoralist communities in East Africa according to gender, wealth, and primary occupation (Smith, 2000). In this method the community identifies their risks in two stages: first, the risks are identified; and second, the risks are ranked according to degree of severity of impacts. This method is simple and easy to use while also being inexpensive and informative. The proponents of this method distinguish between risk and uncertainty by clarifying that the probability of a risk can be determined while that of an uncertainty is unknown. Communities at risk have a clear understanding of the risks they are exposed to in the form of their worries or the closest equivalents of worries in the local language and cultural perception.

The relationship between agricultural efficiency and poverty is intertwined. In agricultural communities, poor health reduces income and productivity, further decreasing people’s ability to address poor health and inhibiting economic development (Hawkes and Ruel, 2006). Higher agricultural productivity affects family earnings and nutrition, which in turn improves labor productivity and results in better health and well-being (Oshaug and Haddad 2002). The relatively low level of endowments in farming assets that characterizes poor households can significantly impede agricultural efficiency.

In situation analysis from this perspective, farmers’ livelihood is viewed as a durable capital stock that yields an output of healthy time. Individuals are endowed with an initial amount of this stock that depreciates over time and can be increased by investment. By investing in rural livelihoods empowerment, households expect to increase the stock of available healthy time, which will increase the amount of time available for earning income or for producing consumption goods. Extending traditional agricultural household vulnerability poverty analysis, Pitt and Rosenzweig (1986) developed a framework that allows the evaluation of the impact of change in livelihood on productivity, labor supply, and overall farmer income. Pitt and Rosenzweig’s extension involves incorporation of these variables into the utility function and introduction of an explicit productivity impact.

Focus on farmers’ health, risks and crises can help to either improve or reduce households’ productive ability. A study of women farmers in mixed cropping systems found that the vast majority suffered from intense muscular fatigue, heat exhaustion, and skin disorders, limiting their ability to attend crops (Cole 2006). Poor health will result in a loss of days worked or in reduced worker capacity, and this is likely to reduce output (Antle and Pingali 1994). For example, prolonged exposure to pesticides could cause cardiopulmonary problems, neurological and hematological symptoms, and adverse dermal effects (Spear 1991), which could significantly hamper farmers’ work capacity in the field and reduce their management and supervision abilities.

As noted by the World Bank (2007), illness and death from HIV/AIDS, malaria, tuberculosis, and other diseases reduce agricultural productivity through the loss of labor, knowledge of productive adults, and assets to cope with illness. Proposed by Lipton and de Kadt (1988), the lack of coordination of policymaking between agriculture and health undermines efforts to overcome ill health among
the rural poor and gives pervasive threats to agriculture's role in alleviating many of the world's most serious health problems.

Understanding the Meaning of Vulnerability in this Context

Chambers took a broad perspective in defining "vulnerability". He proposed that exposure to contingencies and stresses, and difficulties in coping with them decreased ability for alternative actions. Vulnerability appears to have both external and internal aspects. The external aspect of vulnerability relates to risks, shocks, and stresses to which an individual or household is subjected many of which may be uncontrollable. Internal aspect relate to an individual's or household's level of defenselessness or a lack of means to cope without damaging loss, or without becoming or being physically weaker, economically impoverished, socially dependent, humiliated, or psychologically harmed.

Vulnerability is linked with people's net assets, which may include their investments, stores, and claims (fines for late payment of debts)2. Examples of investments are: personal investments (education, training, and health), individual productive assets (livestock, farming equipment, houses, land, trees, and wells), and collective assets (soil conservation, water harvesting, irrigation systems, and access to common property resources). Other assets in the household value-chain include food stores, granaries, or rice mills; and money or bank accounts. Individuals or households can make claims on family, friends, or other households within the community, for production resources, food, labour, or livestock. In addition, vulnerability is linked with people's level of poverty, ill-health and malnutrition. These can have different effects on individuals or households over time.

Health security is having low exposure to disease and high access to health services. Poor populations in the study area have high exposure to disease and have poor access to health services or cannot afford medical care. Poor water and lack of sanitation services contributes to high rates of diarrhea death among infants and children. Malaria and tuberculosis are also rampant HIV/AIDS on the increase and is devastating large sections of the population. Health security is closely related to access to basic services of water supply, sanitation, and access to health promotion education.

Integrating human security into local development strategies ensures that vulnerabilities to risks and crisis that culminate into ill health are addressed and minimized, where possible.

The World Food Programme (WFP, 1999) views this concept of vulnerability as a function of exposure to risk and the ability or inability to cope. In the WFP formula, vulnerability increases as the ability to cope decreases, and is expressed as follows:

\[
\text{VULNERABILITY} = \text{EXPOSURE TO RISK} + \text{INABILITY TO COPE}
\]

Exposure to risk is the probability of disaster occurring and its impacts in terms of severity on different geographical areas and population groups. This also includes population sub-sets such as women and children. The ability of a population to cope is their capacity to physically survive the shock with their livelihood more or less intact by depending on their income and other assets such as labor, physical assets, productive assets, social capital, and other support systems and entitlements. Vulnerability of an individual or household is also affected by social/organizational and motivational/attitudinal characteristics of a community (Moser, 1998).

Important Elements of Participatory Action Research (PAR)

Participatory action research (PAR) is a research methodology for achieving action or change and research outcomes (Dick, 2000). PAR is a collaborative process, where the participants in the study serve as co-researchers. To achieve both action and research outcomes, PAR must be flexible and responsive to the situation and the people being studied or researched, and mindful of who will learn or benefit from the research findings.

PAR is used in real situations and its primary purpose is to help solve real problems (O'Brien, 1998). There are many different forms of PAR, depending on who is participating, at what stages they are involved, and specific objectives. For instance, using PAR for conducting research on farmers' health at the village level, local people are the primary focus; and evolve to research partners, not subjects, or research objects (Huizer, 1997).

Retrospectively, the important elements of PAR are participation, action, and research and are defined as they were applied in this project.

Participation is regarded as "the first step in a process of consciousness awakening or conscientisation of the people through their own analysis of and reflection on the causes of poverty and on the socioeconomic structures and processes which affect their lives. No development activity can be successful until this process is well underway" (Burkey, 1993). Therefore, people who are directly affected in data collection and analysis, and in planning, implementation, and monitoring and evaluation, should be included in PAR.

Action -- involves all relevant parties in actively examining simultaneously current action (which they experience as problematic) in order to change and improve it. This is accomplished by critically reflecting on the historical, political, cultural, economic, geographic and other contexts which make sense of it (Wadsworth, 1998). Success of PAR methodology in problem
resolution depends upon the agreement and commitment of those affected by the research. Therefore, the researchers should try to involve them directly in all stages of the research process as equal partners (Dick, 2000).

Research is an experiential methodology for the acquisition of serious and reliable knowledge and is categorized by adherence to organizational and methodological standards. In this application these techniques are being used to understand the poor, oppressed and exploited groups at the grassroots level. Research data can be used to craft creative and transforming leverage as expressed in measured success of specific projects, acts or to document barriers in the achievement of goals towards social transformation (Luers, 1997).

PAR oriented research provides a fluid methodological format, which tangible actions are researched, changed and re-researched within the research process as dictated by research participants. Nor is it simply an exotic variant of consultation.

Instead, it aims to be active co-research, by and for those to be helped. It tries to be a genuinely democratic or non-coercive process whereby those to be helped, determine the purposes and outcomes of their own inquiry” (Wadsworth, 1998). PAR provides an opportunity for those who take part to learn from the process. It is a “learning-by-doing” method.

Therefore, by use of PAR this research was centered on vulnerability poverty analysis (VPA), specifically identifying farmers’ exposure to health risks in the farming season and their levels of coping ability. It also includes an understanding of the long-term factors affecting farmers’ ability to respond to their coping mechanisms and their susceptibility to crisis as well as their requirements for survival or recovery from the crisis.

Research Objectives

The overall goal was to investigate farmers’ exposure to risks and crisis that contribute immensely to their ill health and resilience to cope with the state of vulnerability.

Specific Objectives

To identify causes of farmers’ vulnerability, consequences and coping mechanisms in the six villages of the study areas, and analyze future impact if modifications to these factors could be achieved through policy changes.

To mainstream policy change strategies (the policy instruments that may be needed to improve on farmers’ coping strategies) and achieve simultaneous increase in their agricultural productivity and livelihood improvement.

Research Methodology

Six villages were randomly selected. A situation analysis was conducted during May-December 2010 to articulate the process of information gathering concerning objectives 1 and 2. Basic issues were discussed at the District and Chiefdom levels to reaffirm the research agenda and establish a timeframe for collaborative participation and to ensure local inputs for the joint-learning process. These included:

Selection of Fieldworkers: Selection of fieldworkers was based on the social skills of the counterparts for participatory action research (PAR), their demonstrated superior communication abilities in the local language(s) of the participating villages. This facilitated the PAR at the district, chiefdom and village levels to collect and analyze first hand information in the study area.

Choice of Key Informants: Two levels of informants were surveyed in this study: village participants and governmental experts. All village respondents were viewed as potential key informants through the process of semi-structured interviews (SSI) and focus group discussions. This motivated them to identify knowledgeable and honest representatives for additional key informant interviews and focus group discussions. Their early involvement in the process reduced the problem of gender bias.

Secondary data also improved the efficiency of information gathering by increasing the explanatory values and avoiding the effort of gathering the same information twice. The main information sources included existing knowledge among local government, UN Agencies, local nongovernmental organizations (NGOs), and other notable research institutions in the districts. The secondary data served as background material, particularly in relation to the contemporary context of public health, over time. A desk study of existing information reviewed other reports and articles of similar previous studies.

Data Analysis

Data were analyzed qualitatively using normative and descriptive techniques. This was achieved from the outcome of situation analysis of the participatory action research (PAR). Household surveys also formed part of the qualitative analysis, which was incorporated with data mapping and seasonal diagramming of the induced factors affecting farmers’ state of vulnerability.

Result and Discussions

Profile of Study Area

Formal dialogue and focus group discussions were held in May and December 2010 with local government
Table 1. Community Village Profiles in the Study Areas of Bombali District

<table>
<thead>
<tr>
<th>Name of village</th>
<th>Description</th>
<th>Households</th>
<th>Households interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markeh</td>
<td>Only one open well for drinking and other domestic uses, no family planning services, long distance to health centre, only one primary school with, extended family system, poor latrine system, poor road network, rice farming predominant, access to radio.</td>
<td>76</td>
<td>30</td>
</tr>
<tr>
<td>Barri</td>
<td>Rice farming predominant, one community school with one community teacher, drinking water from wells and springs, poor sanitation, poor housing, poor access road, extended family system, dependants far outweigh the bread winners, no health centre</td>
<td>44</td>
<td>25</td>
</tr>
<tr>
<td>Makarie</td>
<td>Along the Freetown-Makeni highway, a primary school, religious centers, access to radio, wells, secondary school pupils attend school in Makeni by walking on foot.</td>
<td>120</td>
<td>32</td>
</tr>
<tr>
<td>Manjabama</td>
<td>Highway to Batkanu, farming in rice, cassava and vegetables (predominantly pepper), one primary school with untrained and unqualified teachers, poor housing, drink from wells and springs, poor sanitation, access to radio, dependants far outweigh the bread winners.</td>
<td>42</td>
<td>30</td>
</tr>
<tr>
<td>Makeni</td>
<td>District and regional head quarter, urban setting, tap and well water, no electricity, relatively better road network, ten secondary schools, so many primary schools, three radio stations, two tertiary institutions, government and NGO offices.</td>
<td>150</td>
<td>25</td>
</tr>
<tr>
<td>Makerembe</td>
<td>Poor road network, long distance to health centre, one primary school, poor sanitation, more females than males, dependants far outweigh the bread winners, rice farming predominant, drink from streams and springs</td>
<td>23</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: Focus group discussions
* Note: This is the District Headquarter Town of Bombali (> 1000 households), and data was only obtained at the peripheral farmlands of the City settlements with 150 households.

officers and local NGOs, using semi-structured interviews (SSI) and sourcing additional background information from village records. Direct village observations were also made. Villagers’ responses to self-organized group discussions and questionnaire administration were summarized in a qualitative manner to interpret the village profiles, types of vulnerability, underlying causes and consequences, and the coping strategies, as well as opportunities for action. Table 1 shows the profile of study areas in Bombali District.

Food Security Matrix Ranking (FSMR)

The FSMR exercise improved understanding of food security differences, characterizing the households in each village as food secure (those with the access and availability of rice as food throughout the year), food insecure (those who cannot afford access and availability of rice as food for most of the year), and food marginal groups (those who lack access and availability of rice as food during the hunger season, August-October every year). Table 2 shows the food security status in the villages.

Research on food security, especially through the use of PAR helps to identify a number of chronically affected people (World Bank, 2000), and the participants themselves share their knowledge and analysis with each other together with fieldworkers who facilitated the participatory process. This self-organizing system would enable villagers to share information and build their own initiatives using semi-structured interviews and focus group discussions, thereby increasing their responsiveness to understanding food security differences among rural households.

As indicated in Table 2, Markeh village had the highest food insecure group (50%), while Bari and Makeni (farmlands) registered over 50% of marginal food secure
Table 2. Food Security Matrix Ranking of the Study Areas.

<table>
<thead>
<tr>
<th>Villages/Towns</th>
<th>Food Secure Group (%)</th>
<th>Marginal Food Secure Group (%)</th>
<th>Food Insecure Group (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markeh (N = 30)</td>
<td>16.7</td>
<td>33.3</td>
<td>50.0</td>
</tr>
<tr>
<td>Bari (N = 25)</td>
<td>28.0</td>
<td>52.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Makarie (N = 32)</td>
<td>25.0</td>
<td>46.9</td>
<td>28.1</td>
</tr>
<tr>
<td>Maniabama (N = 30)</td>
<td>20.0</td>
<td>46.7</td>
<td>33.3</td>
</tr>
<tr>
<td>Makeni (N = 25)</td>
<td>26.0</td>
<td>54.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Makerembi (N = 30)</td>
<td>26.7</td>
<td>40.0</td>
<td>33.3</td>
</tr>
</tbody>
</table>

Figure 1. Risk from crisis in study areas of Bombali District
Source: Household survey conducted in September 2011

Barri, Manjabama, and Makerembe in were among the towns/villages reported heavily affected from risk of crisis. Less than 20% reported risks experienced from animal disease, diminishing land yield and environmental hazard. The others, especially crop damage, attack by insects, crop failure, poor harvest, and poor climate reflected strong responses, some even up to 100%.

Risks from Climate
The dominant feature of the Bombali climate is an intense wet season of seven months lasting from May to November, and a dry season of five months (Figure 2). The same trend is followed by all villages surveyed; risks from the rainy season were higher than those for the dry season (100% of all respondents in Bombali).

Economic Risks
In the six villages/towns of the survey areas, economic vulnerability was influenced by high prices, fluctuating rural income, increased expenditure for basic needs, and shortage of money (Figure 3). A very strong response (100% for most) was given by the respondents.
**Figure 2.** Risk from climate in study areas of Bombali District
Source: Household survey conducted in September 2011

**Figure 3.** Economic risk in study areas of Bombali district
Source: Household survey conducted in September 2011

**Figure 4.** Social risks in study areas of Bombali District
Source: Household survey conducted in September 2011

**Social Risks**

Rural households in the surveyed areas are faced with different social risks — from criminal gangs and crime, and to a lesser extent from ethnic conflict and rape (see figure 4). People who are destitute probably resort to such activities due to lack of any viable livelihood opportunities. Based on reports there is an increasing
Cultural Risks

The traditional bonds which tie families and communities together in all six villages/towns seem to have weakened as a result of the difficult periods of the civil war and population displacement. The field research noted that the households in all six villages remain culturally vulnerable due to various shortcomings — including loss of cultural identity, family breakdown, failure to observe social customs, and failure to practice customary law. (Figure 5).

Makeni was the great sufferer from cultural risks, as reported for loss of cultural identity (70%), weakening of traditional values (70%), family breakdown (less than 40%) and failure to practice customary laws.

Health Risks

The health situation in the villages is alarming with the availability of, access to or use of safe drinking water (e.g., through pipe, or tube, clean river, public tap, or dug well) and proper sanitation (e.g., toilet facilities) being of prime concern due to the prevalence of water-borne and vector-borne diseases (Figure 6).

A number of cases of cholera and diarrhea among children under five years of age were reported. The households in all six villages/towns also reported cases of malaria (almost 100% of all respondents), parasites, epidemics, and hunger/malnutrition. No case of HIV/AIDS was reported, possibly due to low knowledge and non-testing. Aging was a problem in all villages/towns; thus, coping with an increasingly older dependent population will become a major challenge in the future.

Conclusions and Recommendations

Participatory action research (PAR) is recognized as an effective technique for use in rural development, and appears to be more effective than traditional methods of gathering information on household vulnerability and
poverty analysis. The PAR approach can better investigate aspects of rural livelihoods and resource management conditions that researchers and development officers need to understand in order to plan special programmes on crosscutting issues such as the ill-health of farmers in effort to mainstream appropriate health service delivery in the Local Government Development Plan and manage them effectively. PAR method, when used for vulnerability poverty analysis practically emphasizes the importance of rural systems and local knowledge, and is especially appreciated for its ability to put the people central to the enquiry. As a systematic sequence of interdisciplinary activities, the central feature focuses on local people’s participation to produce accurate information and analyses of rural livelihoods in an iterative and efficient manner. The focuses for data collection are mainly qualitative, nonetheless, with respect this study, the method could be used in combination or sequence, learning about differences rather than estimating averages. In attempting to use this method information was gathered for seasonal affectations on farmers’ livelihoods in the study areas, thus appropriating clear vision types of vulnerability, causes and consequences, coping mechanisms and opportunities for action. Although this study surveyed six villages and 190 households, these findings may not be applicable to other villages in other locations. However, the authors feel that significant evidence supports the following goals and conclusions: Narrative testimony indicated that goals for future programs at the rural level should include training or interventions that:

- Enhance higher agricultural productivity,
- Increase family earnings and nutrition,
- Improve labor productivity and
- Achieve better health and well-being through strategies in health care interventions

Therefore, we recommend and conclude:

Many households in this study were asset poor and marginalized. They have no access to minimum basic human needs such as access to clean water and sound preventive health care. Therefore, further analyzes are needed to define key problems and causes of these problems. Specific attention will be required to prioritize interventions for amelioration of rural household vulnerability risks and crises.

Communities identified women at increased risk during the farming season because the carry the burden of more than 100 hours per week unpaid job (fetching water, preparing the daily meals, going fishing, working in the farm, fetching wood, etc.). Development programmes must therefore, be more inclusive of women as they seek opportunities to improve their productive lives as key contributors to household livelihood improvement.

Most importantly, building the local capacity at all levels on issues specifically designed to serve the poor (such as food security, healthcare education, agricultural and extension services, and institutional reforms) through participatory learning action (learning-by-doing) must be an immediate priority of both the local government and NGOs working together with the rural poor.

Ongoing research in four specific pilot locations of the Sierra Leone Agricultural Research Institute (SLARI) operational platforms countrywide will translate the information into valuable instruments on the effects of health illness affecting the distribution channels within the households’ production system, thereby, mainstreaming these instruments into policy that may be needed to improve on farmers’ health and achieve simultaneous increase in agricultural productivity and reduction in household poverty rate.

References


