

1. Introduction

1.1 Introduction to the central research question

Food insecurity and poverty exist in a vicious circle of poverty leading to low natural resource productivity, leading to food insecurity, which again leads to poverty. The need for more efficient and effective use of resources in agriculture becomes evident, and extensive research is continuously being conducted to develop improved agricultural methods. But although this new technology is available, the adoption rates are disappointingly low in developing countries.

“There are no simple answers to the question of why many African farmers unsustainably exploit soils and water and why many do not adopt or adapt other, seemingly superior technologies already available. A clear understanding of these processes is none the less urgently needed.”¹

This thesis will deal with the issue of low adoption rates regarding improved agricultural technology by vulnerable farmers; the barriers and constraints to adoption; and on how to reach an understanding of how to reduce or mitigate such constraints. The thesis will apply a general theoretical discussion of the theories on food security and vulnerability regarding adoption of new methods, and use a case study of primary research on food security from Liberia to provide an in-dept study of the issue.

By examining the food security situation and the extension system in Liberia, a country with crucially high food insecurity, extremely vulnerable farmers, and an extension system that is as good as wiped out after 14 years of civil war, this study will look at whether the hypothesis stating that risk and vulnerability is highly influential in farmers' decision making process, and hence that including risk reduction and mitigation in extension approaches is important in order to achieve increased adoption rates.

¹ Barrett et al (eds.) (2002:xiii)

1.1.1 A Liberian case study

After 14 years of civil war in Liberia, the socio-economic situation in the country has changed dramatically, and the food insecurity is high throughout the 15 counties:

- 11 percent of the rural/semi-urban population is completely food insecure
- 40 percent are highly vulnerable to food insecurity
- All 15 counties have high to extremely high chronic malnutrition rates

1.1.2 Reasons for low food production

One of the main reasons for food insecurity in Liberia is low food production. The majority of the Liberians was displaced and lost most of their physical assets during the war. Since the war ended in 2003 people have been returning to their homes to restart their livelihoods. Because the presence of both national companies as well as foreign investors has declined dramatically since the start of the war, there are few alternative livelihoods to farming in rural Liberia. Although agriculture is central to the development of the economy, addressing food security and providing employment, the food production in Liberia is critically low. The evolution of traditional farming methods ceased during the war, and the farmers have little or no access to new, improved farming methods and mechanisations. A number of reasons for low food production were identified in Grand Bassa County:

- The continued use of traditional agricultural practices associated with low yields
- Post harvest losses
- Lack of awareness of alternative crops
- Limited knowledge of livestock husbandry
- Scarcity of suitable seed varieties
- Over reliance on cash crops
- Reliance on wage or paid labour rather than producing food for personal use

As a respond to the food insecurity in Grand Bassa County the Irish NGO Concern Worldwide started a Farmers Resource Centre (FRC) in District #2 in the county in 2004. The FRC objectives are to conduct research on new crops, livestock, and farming methods to multiply improved seeds and livestock; and to train the poor farmers in the county in improved farming methods to increase their food production.

The case study will discuss in detail what value the poor farmers are getting from the FRC; whether the FRC has an impact on the farmers' food production and vulnerability context; and what categories of farmers are being affected by the FRC.

The thesis concludes with a summary of the main outcomes of the study, and suggests some approaches and specific activities for organisations working to reduce food security by training farmers in improved methods to undertake in order to address both organisational issues and household level risks in agriculture.

1.2 Rationale for study

Liberia is one of the worlds most food insecure countries. Before the 14 years of civil war Liberia had one of the best living standards in Sub-Sahara Africa, but, sadly, the country's social structure was completely destroyed during the war. Currently malnutrition and food insecurity is hindering any development in the country. The Irish NGO Concern Worldwide runs, among other programmes, a livelihood programme that targets this food insecurity in 4 of the 15 counties in Liberia. The case study in this thesis is based on the findings of an assessment of one of the food security projects Concern Liberia has developed together with the local farmers in order to make the farmers' livelihoods sustainable. By conducting intensive research on the food security situation of the farmers and of their needs, as well as evaluating the project, this study will help Concern critically analyse the project and get an increased understanding of the underlying factors of the desperate food security situation in the county.

By treating this study as a case study, one can also draw parallels to other food insecure countries in the developing world, as the vulnerability and risks of a poor individual farmer often influence livelihood strategies that are similar all over the developing world, regardless of the characteristics of the shocks and trends that typify their lives.

1.3 Research objective

The objective of the research is to reach an understanding of the issues around adoption of improved farming methods by vulnerable farmers in food insecure countries, and of the root causes and effects of these issues. The case study of the

Liberian situation is conducted to achieve an in-depth appreciation of such issues, causes and effects.

2. Background Liberia and Grand Bassa County

Liberia is situated on the West Coast of Africa, a relatively small country with only 111 370 sq. km and an estimated population of 3.2 million. There are two seasons in Liberia; rainy and dry, with temperature varying from 24°C to 30°C and a high degree of humidity. It is one of the wettest countries in the world with an average annual rainfall of 4,650mm per year in the coastal areas and a somewhat less significant rainfall count of 2,240mm in the interior. The land is highly fertile, but greatly covered by thick rainforest.

The country 'gained independence' in 1847, but was literally run by the US – first directly, then indirectly – until Samuel Doe overthrew the US friendly government by coup in 1980. Although such a coup was highly anticipated, with a small elite of 'settlers' (Americo-Liberians coming to Liberia from the US as freed slaves) and their descendants holding all actual power, and the rest of the Liberian population living in extremely bad conditions, no one could have foreseen the 14 years of civil war that followed. The war destroyed the socio-economic fabric of the country and led to almost 10% of the population being killed and at least half of the population was displaced. Much of Liberia's infrastructure was destroyed or severely damaged throughout these years, all levels of government were left in disarray, and the economy was shattered.

Since the return to democracy in 2003, support has come from mainly INGOs and bilateral agencies, in addition to the United Nations and its agencies. The Government of Liberia in its attempt to stabilise the country economically and politically has formulated policies to help achieve these, including the recently finalised² Interim Poverty Reduction Strategy Paper (IPRSP), the Liberia Employment Action Programme (LEAP), the Liberia Emergency Employment Project (LEEP), the Liberia Statement of Policy Intent for Agriculture, and the Agricultural Policy which is due to be finalised within 2007.

A multitude of challenges will arise for any government in a post-conflict situation when trying to build up a country's institutions and structures, assets, trust, and social relations. One such challenge is for the myriad of NGOs and INGOs (currently

² August 19th 2006

over 600) present in the country to succeed in coordination and cooperation. Creating a cohesive policy environment where the government, the civil sector and the private sector can all successfully work together is the first step towards sustainable development.

2.1 Major causes of food insecurity in Liberia

Despite the fact that access to land is not a major problem in Liberia, farming is not of an extensive nature. Similarly, lack of tools, quality seeds and agricultural inputs negates against intensive farming, and the productivity levels of farms throughout the country, where farming households use traditional production techniques and very limited use of modern inputs, are very low. Furthermore, the potential of the agricultural sector of this fertile land is depressed by low yields and limited market opportunities. Currently it is cheaper to buy rice imported from China than buying local rice.

Access to credit is also a significant barrier to developing livelihood options. The CFSNS report found that, although 53% reported having access to credit, this was in the form of cash that is borrowed from friends or relatives, rather than formal channels. The traditional susu-clubs were reported as being the second most common way to access credit. However, only 14% had access to such means.³

A new comprehensive multi-stakeholder survey that studied both access to food through the ability to purchase or produce, as well as the actual frequency and diversity of food intake in rural and semi-urban Liberia found the following:

- 11 percent of the rural/semi-urban population is completely food insecure – with a maximum of 28 percent in the area that was mostly affected by the war and displacements.
- 40 percent are highly vulnerable to food insecurity, 41 percent are moderately vulnerable to food insecurity and only 9 percent completely food secure – dropping close to zero in five of Liberia's 15 counties.
- All 15 counties have high to extremely high chronic malnutrition rates. On an average, 39.2% of the children below 5 years of age are stunted; about 26.8% are

³ Source: Concern Liberia, Livelihood Security Programme 2007-2011 Proposal

underweight; and 6.9% are wasted. 13.5 percent of women have a low body mass index.

Figures from UNDP's HDR of Liberia from 2006 presents an equally dire socio-economic situation; the number of IDPs in 2004 were over 160 000 people; the unemployment rate in the same year were 85%; and the poverty rates showed that over 76% lived under the poverty line, while 52% lived in extreme poverty (living on less than 0.50 USD per day). According to the report Liberia remains one of the most food insecure countries in the world.

The joint FAO/WFP Crop and Food Security Assessment carried out in January/February 2006 underscored the multi-dimensional nature of poverty. The four major causes of food insecurity in Liberia identified in the report are:

- Agricultural production constraints;
- Poor infrastructure and limited access to markets;
- Poor biological utilization of food due to lack of access to health services and safe water and sanitation facilities;
- Lack of household labor and social support caused by a general disruption of traditional social networks during the war.

The RSA from 2005 by The World Bank highlights another constraint for farmers' sustainability. The Liberian political system allows the town chief to fine the town youth for "any small thing", and because the youth have no money or assets they cannot pay the fine. Somebody will 'buy' their case, and the youth will then have to work for free for that person and the chief to pay off the fine. Thus the youth do not have the possibility to work on their own farms, remain poor, and end up stealing again – which will lead to other fines and keep the youth stagnant in poverty.

2.2 The Liberian government's approach to alleviate food insecurity

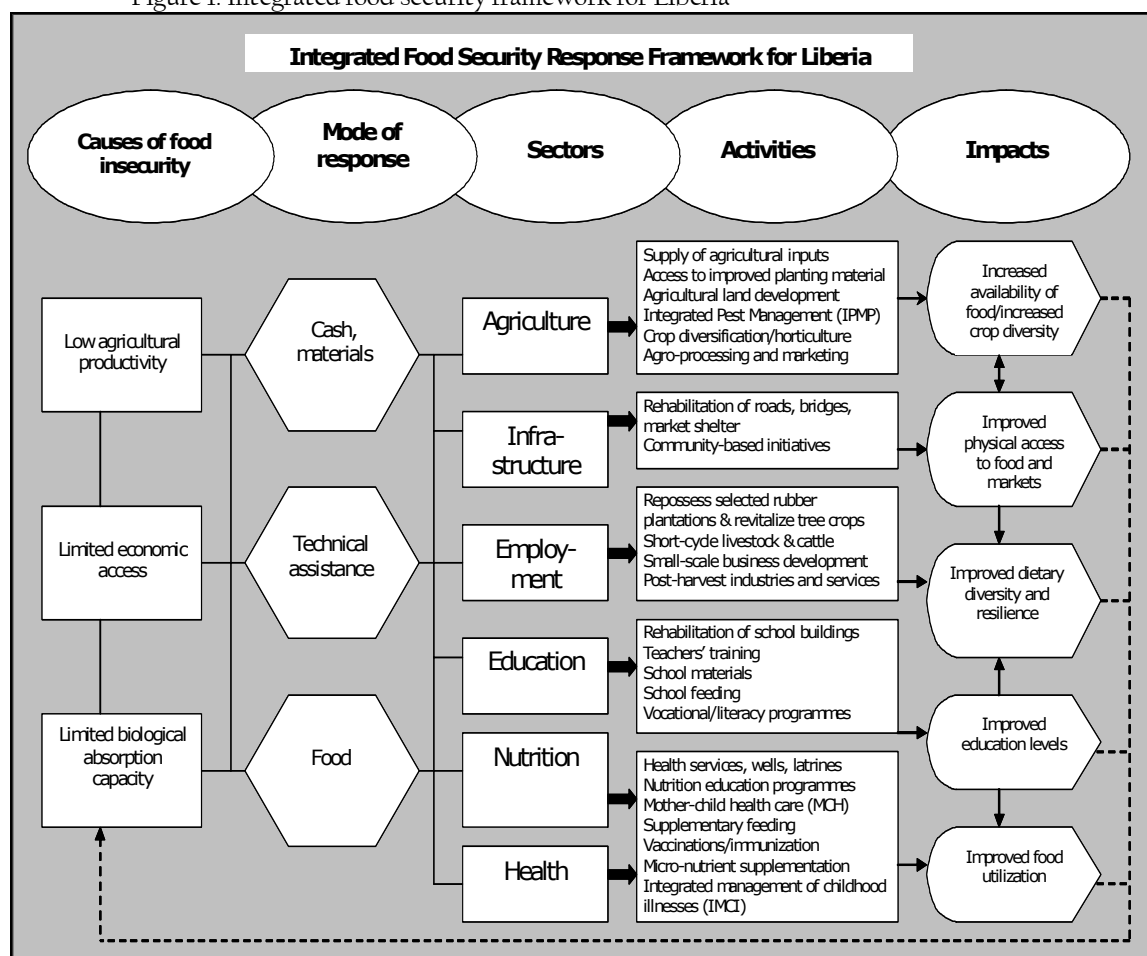
A four-pronged approach is suggested by the Liberian government to address the food insecurity in Liberia⁴:

⁴ Source: Government of Liberia, *IPRSP* (2006)

1. Increasing food availability through improved production and diversity, improved storage and conservation, and improved marketing and acquisition of food and inputs for agricultural production. The government is currently focusing on the export possibilities of cash crops such as rubber, cocoa and hot pepper to create an income for necessary agricultural inputs for both the government and the farmers.
2. Increasing people's economic access to food through income-diversification in the agriculture and non-agricultural sector. Through creating new criteria for foreign investment including in-country diversification, farmers will have an opportunity to add value to their products. Currently there are no such criteria and most of Liberia's crude resources are being exported out of the country in their pure form at very low prices. In addition government representatives have attended training at the Songhai Centre in Benin which has a holistic focus on agriculture and trains farmers in how to use all of their resources to become self-sustainable. The Songhai approach incorporates training in all areas of farming, including recycling everything into the farm, as well as enterprising skills. By incorporating the Songhai principles and the FFS method the government hopes to improve the food security situation in Liberia through increasing the food production.
3. Improving biological utilization by addressing problems affecting maternal child care including feeding practices and access to health services, water, and sanitation.
4. And finally, enhancing the institutional capacity to manage national and local development interventions and resources devoted to the improvement of food security – this would include the development of an institutional policy framework and food security monitoring system.

Figure 1, sourced from the CFSNS researched and written mainly by the WFP and FAO in conjunction with the Liberian MoA and MPEA, presents the need for an integrated approach to improve the food security in Liberia. It is recognised that to achieve food security, all of the sectors identified in the framework need to work together under one food security policy.

Figure 1: Integrated food security framework for Liberia



2.3 The Liberian extension services

“Our extension workers are not working because the extension system is not working. We are faced with a challenge of implementation.”⁵

The extension system, as all the other institutions and systems in Liberia, broke completely down to non-existence during the civil war. The MoA are now facing many challenges trying to build it up again in the most effective possible way. Box 1 describes the status quo of extension in Liberia today; the resources are few while the need is extremely high. Some of the main challenges for the development of a new extension system are:

- An unclear agricultural policy around extension

⁵ Assistant General Director of CARI: Charles McClain, at extension workshop, 28.06.07, Thinkers Village, Liberia)

- Issues of land ownership and land tenure/use lead to no incentive nor clarity around what land to cultivate
- The tradition of communal use of land in many areas of Liberia⁶ creates issues of how to divide the land, as displaced people are returning to their land
- There are no incentives for extension workers to relocate to the rural areas
- A lack of monitoring and evaluation of the existing extension services
- There are no existing databases for the extension workers to use

On a positive note, there is huge commitment and enthusiasm amongst the public and civil sector to create a new, well functioning, farmer-led extension system. As the Deputy Minister for Agriculture, Extension and Research pointed out:

“The good thing is that we have the opportunity to create a whole new system, to only bring what worked in the old system from before the war, and to add what will suit our country best. Politicians have been deciding what kind of crops farmers should plant. Service providers have also been forced to implement what politicians want. We need to see new structures emerging.”⁷

Box 1: The dire state of the extension services in Liberia

An example of the dire state of the Ministry of Agriculture’s lack of assets is the fact that the county of Grand Bassa - a county of more than 300 000 people, and most of them farmers - have no more than 2 agricultural extension workers/advisors; no vehicles or motorbikes to access the field; no computers, and deteriorating offices. To compare the situation: the Concern livelihoods programme in the same county has 2 extension workers; 2 agriculturalists; 3 motorbikes for the field; 1 computer and a new office with living space. While the NGO staff earns over 200 USD per month, the government staff is paid approximately 40 USD monthly. There is only one trained veterinary in the whole country. He works for the government.

2.4 Major causes of food insecurity in Grand Bassa County

Grand Bassa County is a coastal county situated roughly centrally on the coast of Liberia, to the south east of the capital Monrovia. The county is predominantly agricultural with an estimated population of 250,000. The land is bush, forest and secondary re-growth, consisting of pockets of fertile swampland interlaced with

⁶ This tradition was never common in Grand Bassa County

⁷ Quote from her presentation at extension workshop, 28.06.07, Thinkers Village, Liberia

bands of laterite. The rural population, mainly members of the Bassa tribe with Kpelle people in the north, predominantly practise shifting (slash and burn) cultivation. The main crops grown include rice and cassava, with a limited amount of vegetable production. The main non-agricultural source of income is manual processing of palm kernels to palm oil. Many families keep chickens or ducks, while only a few keep goats or sheep. The vast majority of the households with goats and sheep have recently received these from aid organisations.

Before the crisis in the late 1980s, jobs were relatively easily available; foreign employers included the rubber company LAC, the mining company LAMCO, and LIBING producing palm oil. Accustomed to being able to find paid casual employment, many rural dwellers had abandoned farming as a way of life. As a result of this reliance on non agricultural employment and the impact of the war, many of the residents of rural Grand Bassa have little or no previous experience of food production. This knowledge gap, combined with a lack of basic resources such as seeds and tools, has led to a situation where farming and agriculture is barely at subsistence level.

The external factors affecting the households of District #2 can be divided into economic, social/ethical, environmental, and political factors. The economic factors affecting the farmers in District #2 are the large amount of external aid which is funding institutions such as clinics, hospitals, schools, and agricultural research and training centres like the FRC. They also include the level of access to credit and loans, the price of agricultural input, as well as the price of their products, and the level of private investment in the area. As the level of international financial investment has sunk dramatically since before the war the rural population of Grand Bassa is suffering greatly from this. The current government is focusing significantly on creating incentives for increasing foreign private investment, coupled with the creation of incentives for the farmers to network and organise themselves in cooperatives.

Social and ethical factors include local land tenure laws which prohibit some farmers from ever owning their own land, as well as local gender opinions and trends which, in Grand Bassa and Liberia in general, positions women as largely financially dependent on men because the women tend to do the unpaid labour within a

household or community. The environmental factor of the three months of rainy season contributes to making the farming livelihoods in District #2 unsustainable. The very heavy rain restricts almost any sort of crop growing, and the farmers have to rely on any food they may have saved and on hunting and gathering of other foods from the forests. The rains and floods also destroy much of the infrastructure every year, and increase the danger of water born diseases. The political situation in Liberia has left a generation-wide knowledge gap in the population, and the high level of corruption within the political institutions is keeping the human and financial inputs from reaching the farmers.

2.5 Concern's livelihoods and food security role in Grand Bassa

Concern Liberia's Grand Bassa Food Security Programme was established in January 2002 following a base line survey which highlighted a number of key constraints to sustainable improvements in food security. Reasons for low production of food included, amongst others:

- The continued use of primitive agricultural practices
- Traditional farming methods associated with low yields
- Post harvest losses
- Lack of awareness of alternative crops
- Limited knowledge of livestock husbandry
- Scarcity of suitable seed varieties
- Over reliance on cash crops (rubber)
- Reliance on wage or paid labour rather than producing food for personal use

The dreadful state of the infrastructure in the county is also an important factor in the persistent low food production and security. The main highway linking Buchanan to Monrovia is paved, but deteriorating rapidly. Rural roads are unpaved and frequently in very poor condition with no maintenance carried out since the late 1980's. Many rural bridges are in a perilous condition.

Concern Liberia apply a rights based approach when developing all their programmes in order to analyse and address the root causes of poverty, and to support the rights-holders in making decisions that affects them on all levels. All Concern Liberia

programmes address crosscutting issues such as HIV/AIDS, gender equality, and partnership. HIV/AIDS is addressed by mainstreaming the issue both internally and externally through training and support in the programme areas. Gender equality is addressed through encouragement of female participation in all activities throughout the programme areas, and the main focus is to empower women on decision-making level. Concern Liberia will work towards implementation through local partners who share Concern's vision and mission, and through the national government through capacity building and training.

2.5.1 Concern Liberia's livelihoods programme's overall goal

The goal of the livelihoods programme is to enable poor households in Grand Bassa, Lofa, Bong and Montserrado Counties to achieve adequate and sustainable access to and control over resources to enable them to achieve their livelihood rights without undermining the natural resource base.

2.5.2 Programme purpose

To improve the livelihood options and strategies for poor households, in order to improve their livelihood security. The FRC aims to contribute to increasing the human capital of the farming households - because so much got lost during the war - in order to thus increase the other assets of the poor farming households. These losses are restraining the Liberian people's abilities to make choices and access opportunities.

2.5.3 Programme outputs

1. Sustained increases in the levels of food production, processing and utilisation.
2. Improved access to markets and micro finance including cooperatives.
3. Improved and strengthened capacity of local institutions to respond to livelihood security issues.
4. Reduced vulnerability of households to factors which undermine food security through disaster risk reduction initiatives.

2.6 FRC's objectives and brief description

2.6.1 Project Objective

The FRC objective is twofold; to conduct research on new crops, livestock, and farming methods in order to multiply improved seeds and livestock; and to train the poor farmers in the county in improved farming methods to increase their food production.

“Two aspects of [2006 HDR Liberia’s] analysis and wide-ranging recommendations are of particular importance. I concur with the report’s evaluation of the human development costs of conflict. These remain the biggest impediments to advancement in Liberia: extreme poverty, high rates of infant and maternal mortality and high rates of illiteracy, among others. These problems have not only suppressed human development, but are the cause of continued deep psychological stress and trauma, which no data can capture. Reversing these costs and improving the indicators for Liberia are priorities for my government.”⁸

2.6.2 Project Purpose

1. To facilitate beneficiary communities to have access to good agricultural practices in their farming activities.
2. To assist communities to have access to good quality and high yielding planting materials.
3. To multiply good quality planting materials at the FRC and to advise farmers on their farms to do small scale self multiplication of essential planting materials.
4. To stimulate food and cash crop production in the community and gradually in the counties.

2.6.3 Brief Description

The FRC is located off the main road in Compound 2, District #2, Grand Bassa County, and is currently cultivating 8.6 hectares of land. Main crops are swamp and upland rice, pineapple, sweet potato, cassava, ground nut, and beans. The FRC is currently keeping chickens, guinea fowl and giant snails for research and

⁸ President Ellen Johnson Sirleaf's Foreword to HDR Liberia 2006

multiplication, and they intend to start raising goats, sheep, pigs, rabbits, and also to develop several fish ponds. FRC staff includes one manager/agriculturalist, one agricultural technician, and two extension workers. The training on improved farming methods for the poor farmers is implemented through monthly farming workshops at the premises and by extension workers going out to the project towns. The FRC have access to 3 motor bikes in order to reach these towns.

The FRC was started in 2004 as a response to the food insecurity brought upon Liberia by the civil war, with the intention to make the farmers self sustainable and thus able to move away from an emergency-focused aid. In January 2006 the FRC was handed over to a local partner-NGO who had been involved in the management of the FRC from the start. However the technical and managerial capacity of the organisation proved to be insufficient and the project started to decline. After lengthy discussions with the NGO and the communities, it was decided that the FRC should return to direct management by Concern Liberia in collaboration with a community elected steering committee, which it did in February 2007.

Each farming workshop also includes awareness-raising around HIV/AIDS and on health and hygiene matters. The FRC currently have 60 project/intervention towns in District #2 of Grand Bassa County. Both on-road and off-road towns are represented. The longest distance from the FRC to a project town is 4.5 hours walk one way. Approximately 500 farmers have been trained every year at the workshops. Because of the long distances for many of the farmers, a small transportation fee is paid. There is no sitting fee, but the participants receive two free meals per day and free accommodation.

2.7 Target group

Concern as an organisation is targeting the poorest of the poor – the most vulnerable groups of society. In District #2 these include the poor farming households, and women headed farming households in particular. The FRC is targeting the women and the youth in the district by including regulations on women and youth representatives in the Steering Committee Constitution, and by mobilizing for a gender-balanced participation from each town for the workshops. They are targeting other vulnerable groups through focusing research and training on crops and animal

breeds that the elderly and the handicapped also can cultivate and raise e.g. ground nuts and cow pea, rabbits and giant snails.

The FRC's dual method of conducting monthly workshops in the FRC buildings complimented with farmer-led extension in the farmers' own towns seek to include all marginalized groups of farmers. The target for the workshop attendance is an equal number of men and women, i.e. both male and female participants from each intervention town.

2.8 The Millennium Development Goals

Concern Worldwide are committed to contribute to the achievements of the MDGs. The following are the relevant goals and targets for Concern's livelihood programme. Given the centrality of targeting absolute poverty, the target of reducing by half the proportion of people living in absolute poverty can be considered the most relevant MDG for livelihood security, while the other relevant goals mentioned below can be contributed to through increased food security and livelihoods options.

Figure2: Relevant MDGs and Targets for the Grand Bassa Livelihoods Programme and the FRC

Goal	Targets
Goal 1 Eradicate extreme poverty and hunger. The two targets for this goal are	<ul style="list-style-type: none"> • Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day • Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 3 Promote gender equality and empower women	<ul style="list-style-type: none"> • Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015
Goal 4 Reduce child mortality	<ul style="list-style-type: none"> • Reduce by two thirds, between 1990 and 2015, the under-five mortality rate
Goal 5 Improve maternal health	<ul style="list-style-type: none"> • Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio
Goal 7 Ensure environmental sustainability	<ul style="list-style-type: none"> • Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources • Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

3. Conceptual and theoretical overview

3.1 Concepts and definitions

3.1.1 Food security

At the 1996 World Food Summit it was agreed that food security exists when “*all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.*”⁹ Hence food security is dependent on multiple factors and the institutions of these (see figure 1). As figure 1 presents, food security has three main, interconnected dimensions, namely agricultural productivity/availability of food, access to food, and biological absorption/utilization of food.

3.1.2 Livelihoods

A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social regulations) that together determine the living gained by the individual or household. All livelihoods are based on a process of production and exchange within formal and informal economic sectors. The concept of livelihoods is a way of conceptualising people’s activities in a holistic and dynamic way. Agriculture is the primary source of livelihood for 60% of households in SSA. Livelihoods activities are the activities that are done to sustain a livelihood. They are dynamic and change continually, they can be seasonal, on the farm, off the farm etc. Understanding all the aspects of livelihoods facilitates a better understanding of all the aspects of a household’s vulnerability, both on micro, intermediate, and macro-level¹⁰.

3.1.3 Traditional agriculture

Stevens and Jabara defines traditional agriculture as “*farming in which the technology used has been developed by keen observation of nature by people who lack knowledge of and access to science and industrial technology*”¹¹. It has typically been passed down from generation to generation and incorporates an in-dept understanding of the cycles and value of nature. When speaking of ‘improved farming methods’ and ‘agricultural technologies’ it typically means crops and farming methods that have been developed industrially

⁹ CFSNS (2006:14)

¹⁰ Adato and Meinzen-Dick 2002

¹¹ Stevens and Jabara (1988:60)

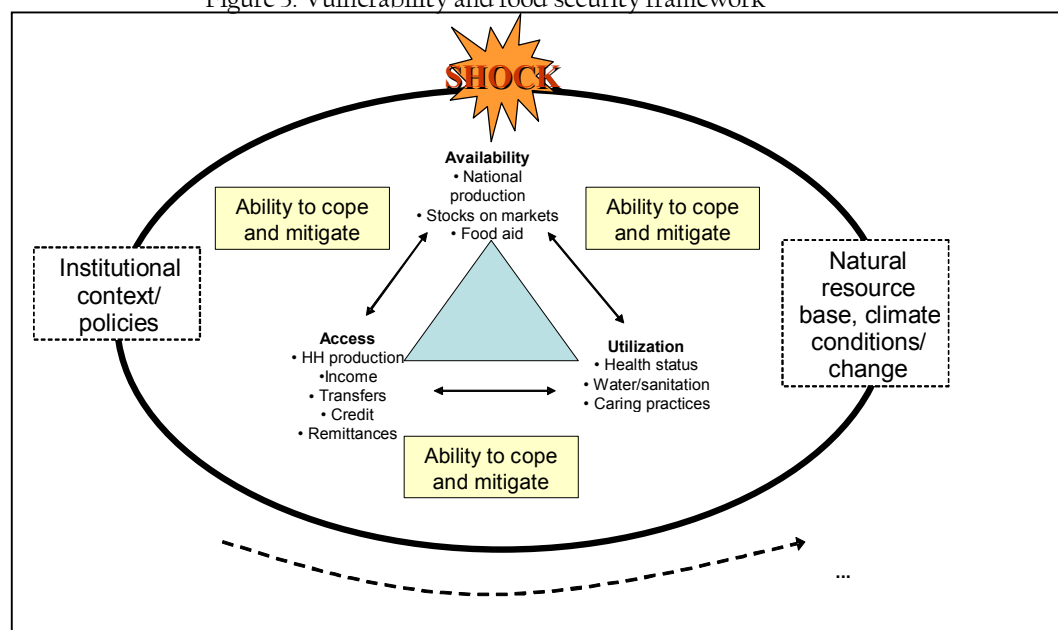
through the science of biology, physics, and chemistry. Neither traditional nor non-traditional agricultural methods are necessarily better than the other – they both have important places within agriculture and farming. Most importantly it is possible to merge the two approaches for a most effective and sustainable farming livelihood.

3.1.4 Vulnerability

Farrington defines vulnerability as “the degree of exposure to risk and the capacity of households or individuals to prevent, mitigate or cope with its effects.”¹² One such risk for poor farmers is future food insecurity, be it then next day, next season or next year. In theory, the more assets a poor farmer accumulates the less vulnerable he will be to the risks of shocks and trends.

Figure 3 presents the interconnectedness of the different factors that affect a household’s vulnerability context, and thus the households’ food security.

Figure 3: Vulnerability and food security framework¹³



3.1.5 Risk

Farrington defines risk as “the likelihood of occurrence of shocks and stresses which can be either external or internal to the household (external include weather-based events, market crises and so on,

¹² Farrington (2004:2)

¹³ Source: Food Insecurity and Vulnerability Information and Mapping Systems website

*internal include marriage expenses, sickness and death).*¹⁴ When there are high risks, it can affect the choices that farmers make concerning their livelihood strategies regarding choice of geographical settlement and type of crops to grow (e.g. why plan long term farming when the risk of having to evacuate is relative high?). The risk of insecurity around low yields from a new farming method, coupled with other risks and factors, can affect decisions around adopting the method or not and there occurs a trade-off between increased production and risk.

3.2 Conceptual framework

The Sustainable Livelihoods Framework (SLF) incorporates all the main factors that affect people's livelihoods and how they relate to and influence each other. Adato and Meinzen-Dick describes the SLF as a tool for *“analysing causes of poverty, peoples' access to recourses and their diverse livelihoods activities, and relationship between relevant factors at micro, intermediate, and macro levels. It is also a framework for assessing and prioritizing interventions.”*¹⁵

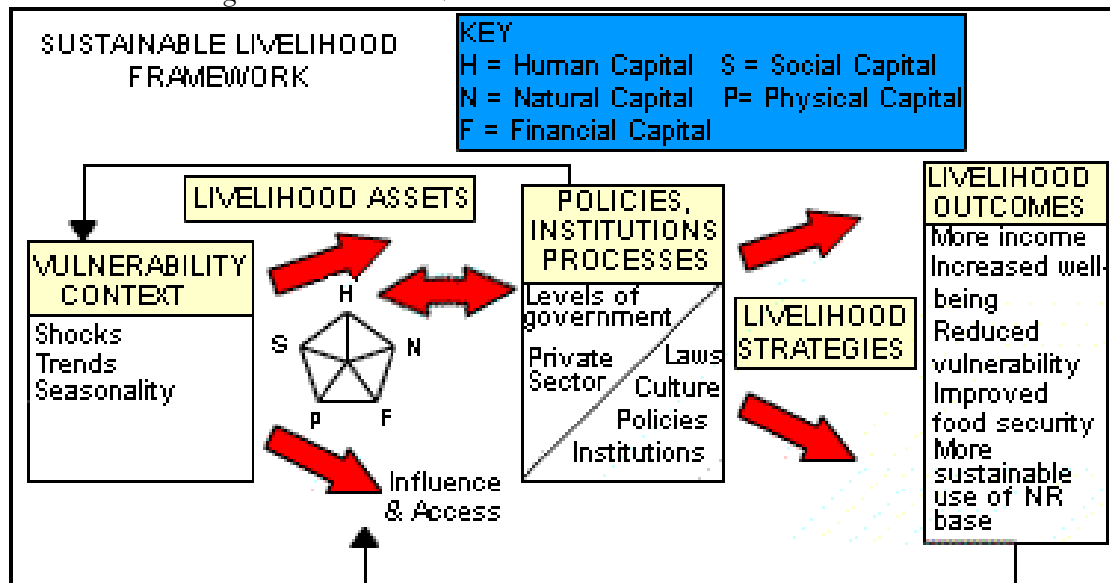
Since aid started to become institutionalised in the 1950s, poverty was for many years measured against people's income and spending capacity. But from the late 80s and early 90s poverty has been regarded as more complex than just defined by people's income and expenditure. Chambers was one of the first to identify the many dimensions of poverty (described in the deprivation trap) including powerlessness, isolation, vulnerability, physical weakness, as well as income poverty¹⁶. Within development today it is commonly understood that all these factors are interconnected and equally crucial when addressing poverty issues. The SLF looks at all of these additional dimensions of poverty, and it also treats people as active, dynamic actors that influence their own livelihoods, not as passive factors within development.

¹⁴ Farrington (2004:2)

¹⁵ Adato and Meinzen-Dick 2002:5

¹⁶ Chambers 1987

Figure 4: The Sustainable Livelihoods Framework¹⁷



3.2.1 Livelihood Assets

The starting point of a sustainable livelihoods analysis is the asset base of a household or a community. The assets are divided into 5 categories: natural (good soil, forests etc.), human (health, ability to labour, skills and knowledge), financial (access to credit, remittances, savings etc.), physical (infrastructure, housing, clean water etc.), and social (see definition below).

3.2.2 Social capital

The term social capital captures the idea that social bonds and social norms are an important part of the basis for sustainable livelihoods. Much of the practical movement towards sustainable development is occurring at the community level. Social capital plays an important role in influencing impacts of agricultural technology. It can facilitate the dissemination of new knowledge through relationships of trust, but it can also constrain such dissemination because of the same strength and power that networks and relationships can carry. The building of social capital reduces the costs and increases the benefits for the individual households. On the other hand, new technologies can strengthen existing demographic inequalities as well as creating new ones.

¹⁷ Source: DFID Guidance Sheets, 1999

3.2.3 Vulnerability context

The vulnerability context comprises the trends, shocks and seasonality that affect a community's livelihoods, and they can both create and destroy assets. The vulnerability context is greatly influenced by the economic, social, political, legal and cultural structures and processes that affect a household and these transforming structures and processes are again reciprocally influencing and influenced by the household's assets and the access to them. The state and its institutions will always have an important role in development. It directly affects a household's asset base, vulnerability, possibilities, and livelihood strategies. Importantly, state institutions need to focus on the specific and unique needs of the different development areas. This involves a change from a top-down to a bottom-up analysis and planning of development.

3.2.4 Livelihood strategies

*"The community's livelihood strategies are a result of the choices made based on its assets, modified by the transforming structures and processes, and in the context of its vulnerability. Structures and processes can facilitate mobility in labour markets, and reduce risk and the transaction costs of starting new enterprises."*¹⁸ Livelihoods strategies are flexible and dynamic depending on changing factors within trends, shocks, processes and structures, and the loss or increase of household assets. The results of these strategies, the livelihood outcomes, are in their turn affecting the future assets of the household.

3.2.5 External factors

The external factors influencing a household or community can be divided into economic, social/ethical, environmental, and political factors. They are factors occurring regardless of the community's households' actions. By using the SLF to analyse them, it is possible to identify livelihood strategies that can decrease such factors' influence on the household's livelihood.

3.2.6 The SLF in relation to agricultural technologies

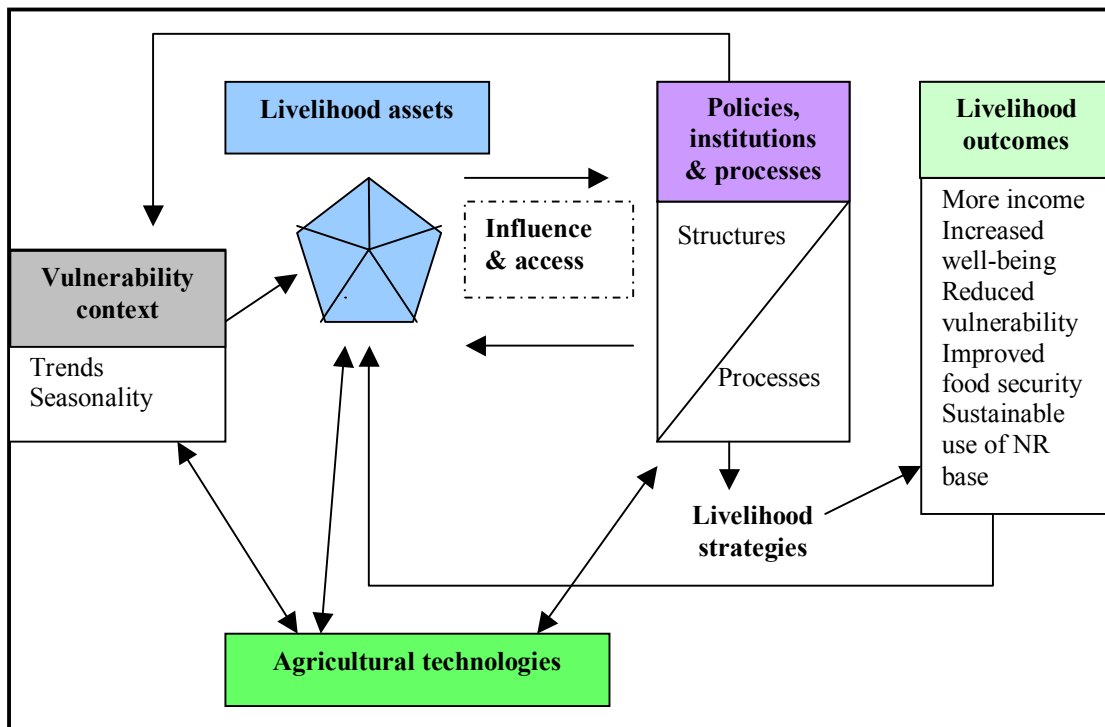
By using the SLF to assess the impact of agricultural research and the transmission of this (figure 5), it is recognised that improved technology has a reciprocal effect on a household's assets, its vulnerability context, and the structures and processes that

¹⁸ DFID 2001:27

influence a farmers' access to assets. The most evident part of a farm household's asset base that affects, and becomes affected by agricultural research, is the human capital. Increasing the human capital by training farmers in improved farming methods can thus lead to an increase in other assets such as financial (e.g. increased income) and natural (e.g. less strain on natural resources) assets.

The transmission of improved agricultural technology can positively affect the vulnerability context indirectly through strengthening the asset base, and directly by being the risk taker regarding the research on the crops and methods so that the vulnerable farmers do not have to put themselves in a high-risk situation by using their valuable assets of land, labour, and time to do their own testing of new technologies. An example of where agricultural research can increase the vulnerability of poor farmers however, is when private or public research institutions intentionally make farmers adopt the use of new seeds that give good yields but cannot be multiplied and thus have to be purchased at a high price every year. The vulnerability context of poor farmers also influence whether they will adopt the improved farming methods or not. If a perceived risk of conflict exists, and the farmer worries that he/she will become displaced and have to leave the farm behind, then it is unlikely that he/she will put in the additional efforts of labour and time that improved methods often demand for the first season.

Figure 5: The Sustainable Livelihoods Framework related to agricultural technologies¹⁹



3.3 Theories on food security and agricultural development

3.3.1 The Diffusion Model

Stevens and Jabara define diffusion as “the process by which innovations spread to the members of a social system”²⁰. Hence the Diffusion Model believes that by increasing the flow of information from research institutions to traditional farmers on new methods and agricultural schemes, in addition to training them in more efficient use of their resources, their production will improve. In other words; by creating access to the best and most recent knowledge on farming methods and improved crops, through extension workers, the press, or both, it is assumed that the farmers will produce better crops and become food secure.

The Diffusion Model approach reached a peak of followers in early international aid, where ‘technical assistance’ from the developed to the developing world was looked upon as the answer to increasing food insecurity. But, as Stevens and Jabara (1988) points out; the lack of knowledge on the local crops, soil, pests, climate, markets, traditional farming methods, access to resources etc. proved to be limiting the

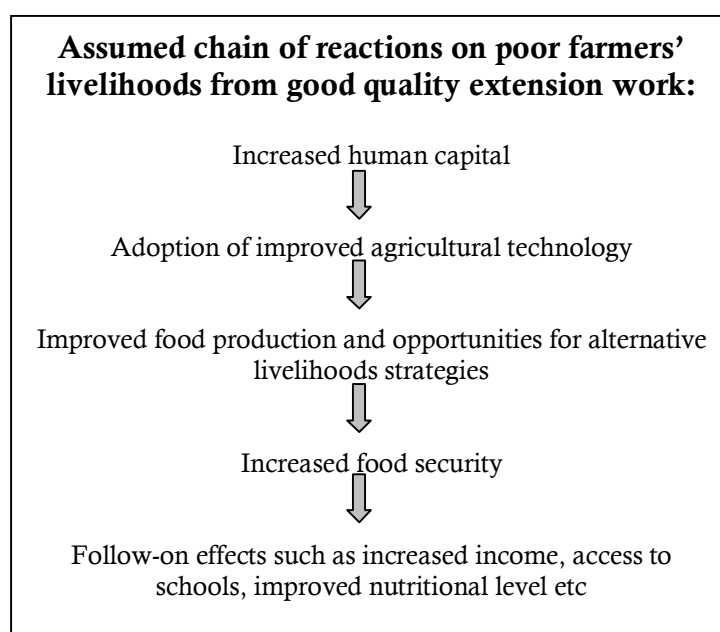
¹⁹ Source: Adapted from Adato and Meinzen-Dick 2002

²⁰ Stevens and Jabara (1988:124)

model's impact. In addition to this important factor they note three more factors that all challenge the model's assumptions:

1. Focusing on how to teach traditional farmers how to make best use of their accessible resources is superfluous, as research show that farmers generally have good knowledge of this.
2. The lack of availability and accessibility of improved agriculture technology in developing nations.
3. This model relies heavily on the quality of the extension workers responsible for disseminating the knowledge.
4. The extension workers often work in geographical areas new to them, which limit their knowledge of the social and cultural conditions of the areas and thus reduce the quality and impact of their work.

Figure 6: Assumed impact of technology transfer²¹



Although the diffusion approach was developed fifty years ago, and has some obvious limitations, the basic theory of it is still highly important for reaching food security for poor farmers.

“The creation of mechanisms to generate and share knowledge - both among farmers and with investigators and specialist centers -, is now a condition of survival of rural communities.”²²

²¹ Adapted from Stevens and Jabara (1988)

²² Castello and Burch (2007:i)

Information is a crucial element of farm households' decision making process. Kinsella (1996/7) outlines the different sources of information used by different categories of viable or potentially viable farm households. The findings show that while neighbours, friends and family were consistently the most used source of information for influencing the key decisions of all the categories of farm households, extension services were the second most used source, especially for the 'expansionist' households. And as Kinsella points out, it is the most vulnerable farm households who are in greatest need of the extension services to assist them in their choices affecting their livelihoods. But knowledge does not necessarily get transferred to practice. Knowledge and attitude are the bases for people's practice, and people's attitude is influenced by both the farmers' resources and their culture-specific situation. The Induced Innovation Model incorporates these elements.

3.3.2 The Induced Innovation Model

A more recently developed theory of agricultural development is the Induced Innovation Model, introduced by Hayami and Ruttan in 1985. It incorporates both internal and external factors in relation to a farm household's food security. These factors are resources, culture, technology, and institutions. The factors all interact, and hence if changes occur in any one of them, changes will ultimately occur within the others as well. Changes can both increase and decrease a farm household's production, while the production reciprocally can have positive or negative impact on the other factors influencing its livelihood. In brief, this model is an earlier and less developed livelihoods framework than the SLF.

3.4 Theories on the risks of adopting new agricultural methods

Within agriculture there exists the ubiquitous element of risk. For subsistence farmers in the developing world where no price-subsidies, agricultural schemes, or other governmental risk management is in place, this element becomes greater and more influential for the farmer's livelihood choices and strategies than in the Western world. For subsistence farmers the livelihood strategy more often than not involve a trade-off of some extent, be it high yields for a shorter crop cycle, or children's education for added labour on the farm. The more vulnerable a farm household is the more risk averse it is, and hence it will not willingly make any risky choices regarding their very fragile livelihood. This will inevitably have effects on the rest of society as a

whole, because a reduced efficient resource allocation in food production will increase food prices and thus food insecurity.

The risks of external shocks and trends happen regardless of the farm household actions and choices. Within agriculture the trade policies of the government can have crucial effects on farmers' livelihoods. The influence of WTO cannot be underestimated, and its criteria of reducing governmental subsidies and other forms of national protection on agricultural produce contribute to increase the vulnerability context of farmers in developing countries. Hardaker et al describe how this will affect farmers in the future:

“The outlook, therefore, is that many farmers will face greater exposure to competitive market forces and so will enjoy less predictable consequences than has been their experience.”²³

Hardaker et al divides the risks within agriculture, and the sources of those risks, into six categories:

Figure 7: Agricultural types and sources of risks²⁴

Risks	Sources for risks
Production risks	<ul style="list-style-type: none"> • Unpredictable weather • Uncertain performance of crops and livestock • Pests and diseases
Price and market risks	<ul style="list-style-type: none"> • Currency exchange rates • Unpredictable markets and prices for agricultural inputs and outputs
Institutional risks (comprising political, sovereign, and relationship risks)	<ul style="list-style-type: none"> • Trade, aid, agricultural, tax policies
Human/personal risks	<ul style="list-style-type: none"> • Death, illness, divorce, family planning etc.
Business risks	<ul style="list-style-type: none"> • Comprised production, market, institutions and human risks
Financial risks	<ul style="list-style-type: none"> • Size of loan or credit • Type of loan or credit • Changes in inflation rate • Changes in interest rate

²³ Hardaker et al (2004: 4)

²⁴ Adapted from Hardaker et al (2004)

3.4.1 Decision analysis in agriculture

To be able to manage risks, it is necessary to assess the risks firstly. To assess what risks the farmers must account for when reaching a decision regarding their livelihood, and how they account for them, Hardaker et al have divided such an assessment into two analyses:

1. The nature of and assumptions regarding the risks of choosing an alternative action and its consequences.
2. The decision maker's preference of possible consequences from such a choice.

By then cross-checking the two analyses one would be able to, Hardaker et al argues, identify the best possible choice of action. This, theoretically, would be how most rational persons make a decision involving high risks.

The types of the different risks encountered in agriculture are described above, and the nature of the decision analysis would be relevant to the type of the risk. E.g. while financial risks can be analysed by braking the different consequences into figures for comparison, production risks can be analysed by braking the different consequences into kilograms produced per square meter etc. Daniel Prost et al discuss the process of decision making for farmers regarding adopting improved, more sustainable farming methods. Their case study findings present the fact that seventy percent of the respondent farmers had not adopted such methods, although IPM practices had been well promoted and emphasised in the area for a few years.

“Clearly farmers develop and use cultural practices they are comfortable with and therefore minimize production risk associated with crop failure or yield reductions.”²⁵

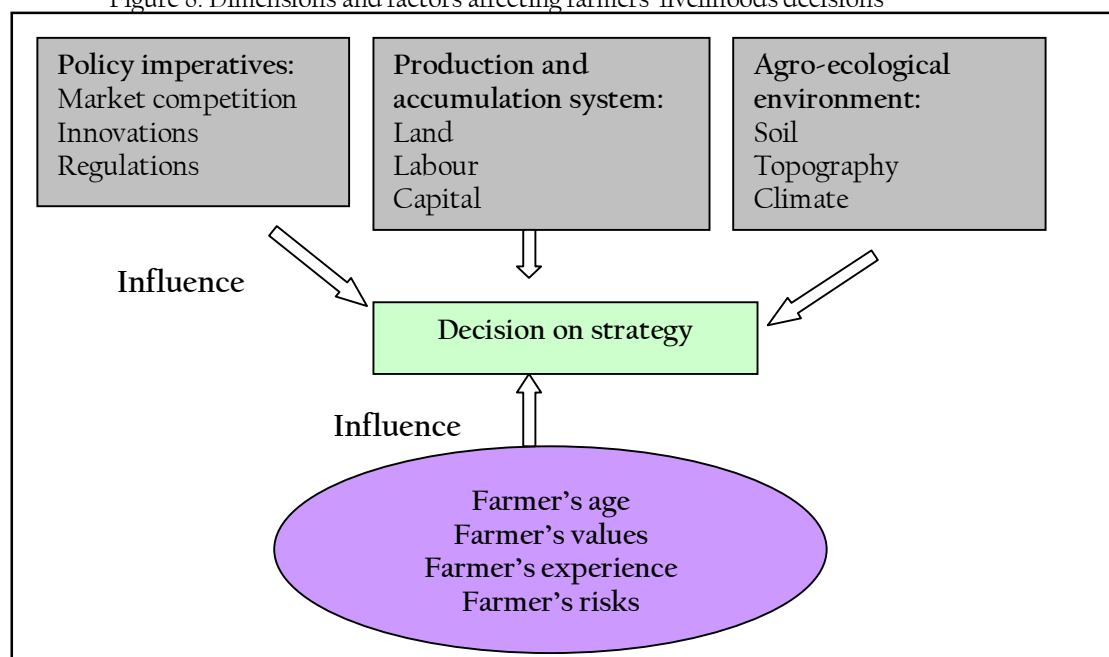
The farmers stated that they believed the new practices to be too costly to implement. In developed countries such environmentally sustainable farming methods are often encouraged by financial incentives for the farmers to adopt them. But in developing countries there are often few safety nets or financial incentives like this. Thus the type of risk that these farmers encountered if implementing these particular low-input IPM practices was a financial one, and the farmers preferred to

²⁵ Prost et al (1996:no page numbers)

use the traditional methods although they would need a higher input, because they were sure of their expected outputs.

Robert and Lighthall (1993) presents an alternative model of the decision making process of vulnerable farmers. The model (figure 8) incorporates three dimensions that, together with the farmer's age, experience, values and risks, influence a farm household's choice. By analysing the dimensions and factors it should, Robert and Lighthall argues, be possible to predict the consequences of a decision.

Figure 8: Dimensions and factors affecting farmers' livelihoods decisions²⁶



Barrett et al (2002) highlight that reasons for adoption or non-adoption of new methods are also always influenced by their culture-specific environment. In order to understand adoption patterns it is important to develop an in-dept understanding of:

- The farmer's objectives and learning processes.
- The farmer's willingness and capacity to make long-term investments.
- The incentives and constraints the farmer faces in making choices.
- The biophysical, institutional and policy context within which choices are made.

Supporting these three theories of predicting consequences through including both external and internal dimensions in a decision analysis, Lasley (1998) discusses how

²⁶ Adapted from Robert and Lighthall (1993)

the perceived risks of adopting new agricultural methods act as barriers. The factors that contribute to such perceptions are dynamic and place- and culture-specific. In Lasley's case study of precision farming, the perceived risks involved factors like complex technology; additional paper work; high age of most of the farmers; and/or lack of confidence in learning of new technology. *"It would seem that acceptance and adoption of precision farming technologies would be enhanced if it can be demonstrated to either reduce or manage risk."*²⁷ Thus it becomes necessary to take a close look at how farmers can reduce or manage risks.

3.5 Risk reduction and management theories

3.5.1 Core dimensions and principles for risk reduction

To improve the rates of farmers adopting improved agricultural methods, there needs to be an incentive for the farmers, and the incentive must produce such possible consequences that it decreases the risks of adopting them. The organisations or institutions need to create systems that both decrease the opportunity costs of adopting methods, and to make them accessible for all demographic groups of farmers, including those with little or no assets. It is too costly for any organisation or institution who is trying to increase food production and food security to overlook the aspect of risk. By identifying it and developing policies and strategies to reduce and manage farmers' risks in agricultural production, the benefits will outweigh the costs as the possibility of farmers adopting improved methods will increase.

Barrett et al propose a five-dimensional strategy for risk reduction and increased adoption, *"built on the fundamental point that [natural resource management] is an investment choice"*²⁸. The main dimension, namely investment, depends heavily on the other four dimensions, namely incentives, information, inputs, and institutions. Whether it is the public, private, or civil sector, or all three in cooperation, that aim to address low adoption rates of improved methods in agriculture, they need to provide the necessary incentives, information, inputs and institutions to create private (farmer) investment. This theory builds on, according to Barrett et al, both theoretical and empirical evidence of a few main principles that will reduce the risk of adopting new methods. These principles include:

²⁷ Lasley (1998:no page numbers)

²⁸ Barrett et al (2002:287)

- A high focus on research regarding how to best promote natural resource management to farmers;
- Local-specific and farmer-led policy and research design; and
- The financial benefits of adopting improved methods must outweigh the costs and opportunity-costs invested by the farmers.

3.5.2 Aspects influencing the risk and vulnerability factors

In theory the risk reduction that risk management can offer individual or groups of farmers can contribute to improved food production and food security, and thus increased livelihoods options and improved livelihoods outcomes. According to the World Bank risk management is expected to contribute to one of the MDGs, namely poverty reduction, by reducing consumption poverty; by preventing decline into deeper poverty; and by supporting people to rise out of poverty²⁹. But, as Barrett et al stresses, any effort to reduce or manage the risks that farmers face needs to be culture and local-specific, as well as participatory identified, analysed, planned, implemented, monitored and reviewed. Farrington and Luttrell (2004) outline the main local-specific aspects that will influence the risk and vulnerability factors:

- The agro-ecological conditions of production, and the infrastructure addressing them.
- Local, national, and international market changes, and the links and relations between these.
- Labour markets, including migration rates and unemployment rates.
- Geographical location and thus natural resources.
- The level of social capital.

3.6 Farmer Field Schools as a risk reduction and management approach

In conjunction with the above mentioned principles, and built on farmers' initiation and terms, the Farmer Field Schools (FFS) presents an approach to farmer training that incorporates risk management simply by involving the farmers on all levels of the training, from the needs identification to the implementation and impact assessment.

²⁹ World Bank (2001)

The importance of authentically participatory approaches to technique development and dissemination cannot be understated, and its influence on the success rates of adoption has been proven again and again within agricultural research³⁰. The FFS is a farmer-led extension approach that started in Indonesia in 1989 as a training approach for integrated pest management (IPM), to reduce the farmers' expenditure on chemical fertilizers and make their farming methods more sustainable. The FFS is a dynamic and local-specific approach, and hence there are no certain or right ways of conducting the FFS, only participatory ways.

3.6.1 Basic concepts of the FFS³¹:

- Field Schools assume that farmers already have a wealth of experience and knowledge. The extension worker, or facilitator, should be technically strong, but does not have all the answers, only the knowledge on how to test the different methods together with the students to find the answers.
- They are based on the principles of adult non-formal education.
- The FFS deal with the respect issue, the belief issue, and the traditional issue.
- They take place in the farmers' own communities, in the field as opposed to in a class room, and the curriculum is decided from the crops that the farmers are interested in learning about.
- The FFS include literacy, numeracy, cooperative training, diversification skills, and other skills that will make the farmers able to participate in the whole production and marketing process.
- It is a training of trainers. Commonly, the number of farmers being trained in one season is 25. As individuals, trying something new is often socially inappropriate (e.g. reducing sprays, cover crops), but with group support, trying something new becomes acceptable. These trainers do then have the skills and knowledge of how to train other farmers from their communities the same way.
- The FFS are typically organised on a weekly basis so that the farmers do not have to take a large amount of time off from his/her regular farming activities. Meeting on a weekly basis also means that farmers are participating in a

³⁰ Barrett et al (2002), Prost (1996), Gallagher (2007), van den Berg (2004)

³¹ Based on article from 1999 by Kevin Gallagher (FAO FFS expert) and interview with Gallagher, 01.08.07

course for a whole season, but from an administrative/financial point of view it is the same 40 hours as in an intensive one week programme. The educational benefits of meeting when problems are present (learner readiness), and on a recurrent basis have been studied and shown to be far more effective than intensive courses. The courses become defined by the crop cycle.

- FFS reaches everyone, not just the farmers who have the assets that make it possible to travel to a training institution.
- The FFS try to help the farmers organise themselves, and then help the farmer groups to access mechanisation in order to achieve diversification and added value to their produce. This mechanisation can be as easy as e.g. drying floors for their crops. The FFS can pre-finance some of the equipment, and then train an operator who will run the mechanics and receive some commission of the production. Farmer groups can apply to be an enterprise in order to access such loans.
- The different FFS farmer groups can then, with the cooperative and organisational training they have received at the FFS, create networks for marketing of the farmers' produce.

3.6.2 Impacts of the FFS

Although the impact of development work always will be difficult to assess, as there are long-term impacts as well as follow-on impacts that cannot or are not measured, there has been impact assessments done in 25 of the 30 countries where FFS is being implemented³². These assessments have, amongst other factors, looked particularly at the adoption rates of IPM farming methods on the FFS curriculums in the different countries. The assessments demonstrate good impact of adoption of the methods, regarding both less insecticide use per season per farmer and higher yields as a result of this in a large majority of the countries. In addition to such immediate and tangible impacts, the long term developmental impacts included increased political, human, and social assets in several of the cases. Many of the farmers participating at the field schools went on to become facilitators or consultants evaluating the FFS themselves in later seasons.

³² Van den Berg (2004)

The ethos and objectives of the Farmer Field Schools present how a dynamic, local-specific, and, perhaps most crucially, farmer-led planning and implementation process can decrease the individual farmer's risk and hence increase adoption rates. As an approach the FFS present remarkable results regarding adoption of improved farming methods by vulnerable groups like poor farmers in developing countries, and this can be attributed to the fact that the approach considers all the above mentioned local-specific aspects that will influence farmers' risk and vulnerability factors.

3.7 Summary

This chapter has expressed the fundamental influence that risk and vulnerability have on farmers' decision-making strategies, and thus the importance of including risk reduction and management in development strategies within food security. The additional resources spent on taking risk and vulnerability into account will be outweighed by the benefits of including these aspects. More often than not, the failure to reduce or manage risks will limit the adoption of improved, livelihoods-enhancing agricultural methods. By applying a case study from Liberia, the rest of this thesis will attempt to study whether this statement presents any legitimacy in the Liberian context.

4. Research methodology

4.1 Outline of research methodology

The case study strategy was chosen because it will represent a typicality of the risks faced by vulnerable farmers; it will illuminate the general by looking at the particular. The primary research on the issue of adoption of improved methods by vulnerable farmers is based on the following four specific studies:

- The target group's main needs in relation to agricultural research and training;
- What demographic groups of farmers are utilising the FRC and why;
- The farmers' expectations and understandings of the FRC;
- The impact of the activities of the FRC on the target groups' food production.

For the more general perspective of food security, vulnerability and adoption of improved agricultural methods an extensive literature review of current trends and theories was conducted. The developed research methodology for the case study triangulates qualitative primary research, secondary quantitative research, and a literature review of food security, vulnerability, and adoption of improved methods in Liberia. Triangulating different types of methods can facilitate cross-checking of the research findings for a better and deeper understanding and interpretation of the data.

4.2 Data collection techniques

4.2.1 Qualitative research

The transmission channels from the FRC to the beneficiaries are mainly the extension services and farming workshops, and to a lesser degree the casual labour offered on the FRC grounds. The quality of these transmission channels, the farmers' attendance at the farmer workshops, the farmers' needs in relation to research and training, their expectations, and the FRC's impact were assessed by observing the farming workshops and the extension workers at work, key informant interviews, focus group discussions with primary stakeholders, and PRA in the district communities with the farmers, and with the town chiefs at a workshop facilitated at the FRC grounds.

Figure 9: Research activities timeframe

Week	Data Collection Techniques	Including whom
Week 1	Literature review of Liberia and Grand Bassa food security and agricultural background	Researcher
	Attending workshop on the future of Liberia's extension services	Researcher, FRC manager, MoA, INGOs, CARI, facilitator from STCP/IITA and PICOTEAM
Week 2	Facilitating stakeholder workshop including stakeholder identification and problem identification and analysis	Researcher, FRC manager, Town Chiefs from the 13 original Food Security project towns, DDC Grand Bassa, extension workers
Week 2 – 10	Observing FRC Steering Committee election	Researcher, translator, FRC manager, farmers from 24 FRC project towns
	Field research including PRA and focus groups discussions in 16 selected towns	Researcher, translator, farmers
	Key informant interviews with poor farmers, different levels of MoA, INGOs and local NGOs	Researcher, translator, farmers, MoA representatives from district, county and national level, INGOs, local NGOs
	Observation of the monthly farming workshops	Researcher, FRC staff, farmer participants
	Presentation of preliminary findings of primary research and recommendations	Researcher, PM, FRC Manager and PFS
Week 11	Attending MoA Food and Agriculture Policy Strategy Consultative Meeting of Stakeholders	Researcher, MoA county and national level representatives, MoF, MoL, press, CARI, DRC, FAO, UNHCR, WFP
Week 11 – 13	Continued literature review of food security situation in Liberia and Grand Bassa	Researcher
Week 13	Presentation of findings and recommendations in Grand Bassa	Researcher, PM, PFS, FO, FRC Manager, extension workers
	Presentation of findings and recommendations in Monrovia	Researcher, CD, ACD-P, PSO
Week 14 – 17	Writing of final report for Concern Liberia of findings and recommendations in Dublin	Researcher
Week 18 – 22	General food security, vulnerability, and agricultural risks literature review	Researcher
	Writing of final draft of thesis on vulnerability and food security in Grand Bassa, Liberia	Researcher

A key issue for the research was to translate the food production outcomes of the FRC approach into vulnerability indicators. To be specific; to assess whether there was a clear link between improved food production and engagement with the FRC. The objective was to translate the food production results into indicators of health, security, power - all of which buffer households from risk factors. It was also necessary to clearly list and prioritise the vulnerability factors through focus group discussions and PRA:

The PRA included:

- Drawing of seasonal calendars and activity profiles by the focus groups and the researcher as a facilitator to get an understanding of what times during the different seasons the farmers utilise the FRC. It is important to understand whether some months, and if so, which ones, puts an additional pressure on the stakeholders. This is especially valuable data regarding who within the family are under extra stress during this time.
- Social mapping exercises with the focus groups and the researcher as a facilitator to assess which demographic groups are utilising the FRC. This is a reconstruction of the layout of the village by the villagers, on the ground or on paper. Through involving as many locals as possible in this method, more data will be gathered. E.g. females might possess information on other females etc.
- Problem identification and ranking exercises regarding the problems, challenges, and constraints that the farmers encounter throughout the year by both male and female focus groups. This is a method for learning how the stakeholders categorise and prioritise. It invites them to compare items of interest with each other and then place them in a matrix regarding their rank of interest. Through this method the researcher can gather valuable data regarding which of the stakeholders rank what interests higher.
- Transect walks in the towns and to the vulnerable farmers' farms. This exercise is valuable for several reasons; as a researcher you get an idea of what the stakeholder wants to show you, you have an opportunity to observe what goes on in the towns outside of your meeting place, and you have a chance to cross-check what the stakeholders have already told you about practices conducted in the town.

The ethos behind PRA is for the researcher to only be the facilitator, enabling the local people to be the analysts of the issue in focus. Therefore, all PRA methods of data collection include the primary stakeholders. The focus group discussions were divided into male and female groups when possible³³, they involved both youth and elders, and in all but 2 towns (Saturday Town and Kenneh Town) there were one or more persons in the group who had been to the FRC either at the workshops or for casual labour, or had been interacting with the extension workers.

“Where there are trade-offs involved in a new technology, such as between average productivity increases and higher vulnerability, the qualitative methods can improve understanding of how different categories of households and individuals value those trade-offs. Using focus groups and other qualitative methods is also useful in identifying factors that might otherwise be overlooked, or to prioritize which of the many potential effects are important for poor people in that area.”³⁴

Semi-structured interviews are a central part of participatory research methods. They are informal interviews defined by open-ended questions. It can appear more as a conversation in the way that there are only a few predetermined questions or topics, while the rest of the interview is adapted as it develops. They allow the researcher to start out with a core set of information that he/she wants to extract, and also to follow up on the relevant topics that come into view during the interview.

4.2.2 External workshops

The research included participating at a workshop during week 1 that was addressing new directions for agricultural extension in Liberia, facilitated by STCP/IITA-Liberia. During the 2 days of the workshop it became possible to discuss with and observe discussions between key informants regarding agricultural extension. The second external workshop was hosted by the Ministry of Agriculture. The purpose of the workshop was to involve secondary stakeholders like INGOs, bilateral organisations, and financial institutions in the development of a new policy for agriculture in Liberia.

³³ See section 4.4

³⁴ Adato and MEinzen-Dick (2002:22)

4.2.3 Identified stakeholders and interests

Figure 10 presents a list of all the identified stakeholders and their interests regarding increased food security in the target area. Two of the stakeholders (the DDC and the District Agricultural Officer) were not available for interviews.

Figure 10: Primary and secondary stakeholders and their interests in the project

Stakeholders	Interests
Primary stakeholders:	
The farmers in the selected 15 towns	Increased quality food production and market access Livelihood- and food security
The FRC Steering Committee	Transparent and ongoing communication between the farmers and the FRC
The FRC manager	Good cooperation between the FRC and the farmers Increased quality food production for the farmers in the target area
The FRC extension staff	Increased quality food production for the farmers in the target area
Secondary stakeholders:	
District Development Council	Increased development in the district Good cooperation between the government and the farmers
District Agricultural Officer (District representative of MoA)	Increased agricultural development in the district Good cooperation between government and Concern
County Agricultural Coordinator (County representative of MoA)	Increased agricultural development in the county Good cooperation between government and Concern
G-BAG – Grand Bassa Agricultural Group (local NGO)	Food security for the farmers in Grand Bassa Good cooperation between G-BAG and Concern
CAP – Children Assistance Programme (local NGO)	Increased livelihood security in Grand Bassa Good cooperation between CAP and Concern
NARBFUL (NGO working in Grand Bassa)	Increased food production and security for poor farmers
Ministry of Agriculture	Increased livelihood- and food security for Liberians Integrated sectoral cooperation

Figure 11: External stakeholders and informants and their interest in the project

External key informants	Interests
German Agro Action (INGO with agricultural programme)	Human rights, sustained development, a guaranteed food supply and conservation of the environment in their target areas in Liberia
Mercy Corp (INGO which used to have a livelihoods Grand Bassa programme)	Improved security, justice and agricultural production in their target areas
ZOA Refugee Care (INGO with livelihoods programme, no programme in Grand Bassa)	Increased livelihood security for the poor in their target areas in Liberia
FAO Liberia (Years of experience in Grand Bassa, doing a seed distribution during the research)	Improved nutrition, standard of living, agricultural production and condition of the rural population in Liberia
FAO Integrated Pest Management programme in Liberia	Increased sustainability of Liberian farming systems
FAO Farmer Field School programme in Liberia	Improved training in integrated, sustainable farming systems in Liberia
PICOTEAM South Africa	Enhancing key actors' performance and positive change within economic, agricultural and educational sectors
CARI	Research on improved crops Distributing of the improved crops and seeds
STCP/IITA	Sustainable and integrated farming systems in Liberia FFS training approach
DRC-Liberia	Sustainable re-integration of IDPs
ATC-Liberia	Farmer-led extension approaches in Liberia

4.2.4 Quantitative research

The secondary research comprised a base line livelihoods survey conducted by Concern Liberia in Grand Bassa in 2006, coupled with an extensive literature review in order to carry out a situational analysis of the current trends and ideas regarding vulnerability and adoption of improved farming methods, and specifically within a Liberian context.

4.2.5 Analytical framework

The Sustainable Livelihoods Conceptual Framework (figure 4) was used to assess the FRC training methods and research work and the impact of this on the poor farmer's food production in the target area.

4.3 Target population

The target population for the research was the poor farmers within the 60 FRC project towns in District #2, Grand Bassa County. The visited towns were selected by geographical location (i.e. within District #2), by proximity to road, size, involvement with the FRC, and by accessibility for the researcher. The research aim was to reach towns both close to and distant from the FRC, both on- and off-road towns, both small and large towns, and towns with a history of much involvement as well as towns with little involvement with the FRC. The research target was to visit 20 of the 60 towns that were selected by the FRC for interventions.

4.3.1 Classification of towns

- On-road towns were classified as those being close to roads that are theoretically reachable by vehicles. Off-road towns were those that can only be reached by walking. But during the rainy season even the on-road towns become unreachable by any vehicles because of flooding and broken bridges. The poor farmers also have no access to cars or motorbikes in general because of the fare. Hence the on-road factor is only an advantage in the way that the towns can be easily accessed by people and organisations with access to cars or motorbikes during the dry season.
- Towns close to the FRC were categorised as towns within less than a 2 hour walking distance one way, and any towns with a distance longer than that were identified as towns a long distance from the FRC. The longest walking distance recorded for a project town was 4.5 hours one way.
- Towns with over 50 households were counted as large towns.
- All the towns visited were FRC project towns. Some of them have been involved with the FRC only since the new management started in February 2007, some of them since the start in 2004.

Figure 10: Towns visited for research

Visited towns:	
1	Kota Town
2	Paul Reeves Town
3	Saturday Town
4	Joshua Town
5	Beyan Town
6	SOS Juah Town
7	Bohn Town
8	Kekeh Town
9	Elephant Town
10	David Cee Town
11	Lemuel Reeves Town
12	Zwahn Town
13	Government Farm
14	Kenneh Town
15	Tepeneh Town
16	Smith Town

4.4 Constraints for the research

4.4.1 Group partition constraints

The focus groups were mostly divided into men and women separately, although in some towns this was not possible as the other groups would be present and participate as well during the focus group discussions. When this occurred the researcher would try to separate them again, but if they were persistent to stay it was more beneficial for the research to try and increasingly include them, to not force them to do anything they did not agree with.

4.4.2 Constraints for physical access

One constraint was the physical access to the geographical target area. The heavy rain during most of August broke down some of the bridges on the only road going to the area. This made access to the area impossible for some time, and led to the research target of visiting 20 towns for PRA being reduced to 16. But based on the findings and the geographical spread of the 16 towns, this constraint did not have a major impact on the results of the assessment.

4.4.3 Secrecy

The culture of secrecy within the secret societies that are so highly embedded in the life in the communities of Grand Bassa posed another constraint for the research. As pointed out in a rapid social assessment conducted by the World Bank:

*“It is simply a fact of social life in Liberia that the language of secrecy is a rather important modality for much collective mobilization. Participatory development in a cultural climate emphasizing the building of social capital around secrecy seems likely to foster a process of consensus management favoring cliques – specifically elders and ranked lineages, and males in particular.”*³⁵

For an outsider it is difficult to understand the extent of the effects of this ‘language of secrecy’³⁶, and the approach to mitigate any crucial miscommunication or misconceptions was to involve all the participants of the focus groups and other PRA tools as much as possible, and also to be highly aware of this fact while conducting the research.

Another, less documented type of secrecy is based on the towns in District #2’s experiences with aid and development agencies. It was often experienced that the findings from the research in the field with the farmers themselves, did not correlate with data from other sources. For example; the farmers in one town would deny that any development agent would ever have visited the town while there was access to both oral and written statements of interventions in the town. It was explained by several of the secondary stakeholders that this phenomenon is not uncommon in the area, and the reasons for this secrecy are that the persons withholding such information believes that there is more of a chance that a development agency will start an intervention in their town if no interventions have been done there before.

³⁵ Richards, Paul et al (2005), Community Cohesion in Liberia: A Post-War Rapid Social Assessment, The World Bank Social Development Papers: Conflict Prevention & Reconstruction, p. 33

³⁶ Ibid, p. 33

5. Findings and analysis

This chapter will include a detailed discussion and analysis of the research findings. It will discuss and analyse them under several sub-headings representing the different dimensions of the subject of vulnerability and risks regarding adoption of improved agricultural methods.

5.1 The vulnerability context of the farmers in District #2

The majority of poor farm households in District #2 can not sustain themselves with food throughout the year. The rainy season, which lasts from June to October, is the farmers' 'hungry season'. During these 4 months the farmers are not able to grow rice the traditional ways, and hence go hungry unless they have any other source of income for buying food. Some farmers cultivate what they call 'hunger farms' throughout the year for this season. The hunger farms consist of cassava and other root- and-tuber crops that can grow in the rainy season as well, in contrast to the farm households' staple food rice. For different reasons mentioned below this is not a very common coping mechanism and most of the farm households in District #2 depend on buying, bartering or begging for food items during hungry season and also, to a lesser extent, throughout the rest of the year.

The transforming processes affecting households are the quality of, and access to the market and other existing institutions such as the FRC's training workshops; the inter-community and intra-community power relations, which would refer to age, ethnicity, gender and other socio-geographical factors, as well as the societal norms and beliefs within the community.³⁷ The state, as one of the most important institutions regarding extension and agricultural policies, directly affects a household's asset base, vulnerability, possibilities, and livelihood strategies through institutions and policies. The large focus on farmer-led development in agriculture within the present Liberian governmental policies and institutions can thus have a positive impact on the farmers' vulnerability context.

³⁷ The vulnerability context and livelihoods strategies of the farmers in District #2 are discussed in more detail in section 4.2

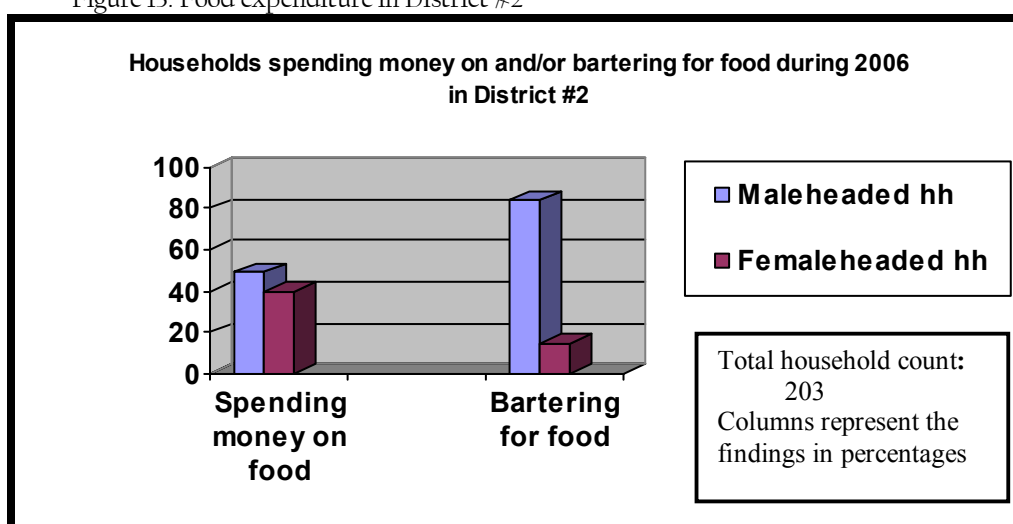
Box 2: The farmers' participation in the project cycle

As the new agricultural policy is currently being written and is about to be implemented, one can only hope that the farmer-led development is not just another buzz word to get financial support from external funders. Participating at some of the government's stakeholder workshops I did question the fact that no farmers were present at all. I was explained, at the different workshops, either that farmers were unable to understand this level of discussion, or that the farmers would be, or had been, consulted at a different stage of the planning process. I realise just how difficult it is to consult the farmers in a structured way, as the farmers are not organised or have any representatives outside of the political representatives; the town chiefs. But that only makes it more necessary to include them in all the stages of the policy process.

5.1.1 Food expenditure

Figure 13 below shows the percentages of farm households that are spending money on and/or bartering for food items throughout the year in District #2³⁸. Out of the 203 surveyed households, 159 were maleheaded and 45 femaleheaded. This gives a maleheaded-femaleheaded percentage of 78-22. The figure shows that maleheaded households both spend money on and barter for food items more often than femaleheaded households do. The maleheaded households were bartering with labour, while femaleheaded households used both labour and 'other' when bartering.

Figure 13: Food expenditure in District #2



³⁸ Figure 1 is based on data from the livelihoods assessment conducted by Concern in Grand Bassa in 2006.

Through PRA and focus group discussions the different reasons stated for not cultivating hunger farms were as follows:

- Inadequate human resources (time and labour) during the year to cultivate two farms.
- Not enough physical resources (seeds, tools) to cultivate two farms.
- Internal shocks (deaths, deterioration of house, theft, illness etc.) affecting the household and thus its amount of, and priorities of, resources during the year.

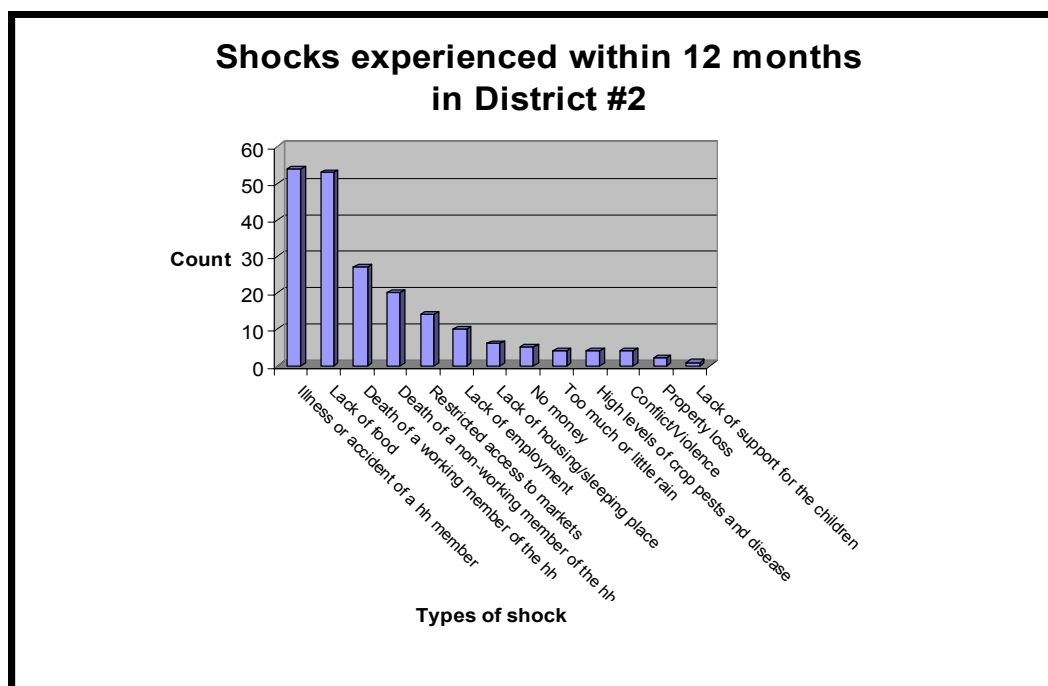
5.2.2 Livelihood shocks

Figure 14 below represents the most crucial shocks that the households experienced during 2006³⁹. Out of the 203 farm households over 50 listed 'lack of food' as the most crucial one. The primary research findings correlate with the data from this survey. The most commonly stated problems/constraints/shocks experienced during the year stated during PRA and interviews with the farmers were:

- Pests (rodents and birds destroying the crops)
- Death or illness within the household
- Lack of food
- Lack of money and access to credit
- Lack of farming tools
- No mechanisms for diversification
- No traction animals
- Restricted access to markets
- Lack of employment opportunities

³⁹ The figure is based on data from the livelihoods assessment conducted by Concern in Grand Bassa in 2006.

Figure 14: Shock experienced in District #2



5.2.3 Coping strategies

The households in District #2 have few alternative means of income to farming. The main alternative source of income is making and selling palm oil, used for cooking and oil lamps, on the roadside. Others do fishing in the rivers and creeks, both for household consumption and for selling. Men can also make a small extra income during the planting season by working for other farmers helping them cut fences for the farms, as this has to be done perennially. None of these activities generate enough income to allow the farmers to give up farming as a livelihood. Thus they are left to cut into their informal livelihood insurances such as small savings, livestock or other or physical assets, and/or to cut out expenditures such as education for the children, cutting down on number of meals per day, soap, palm oil, clothing etc.

There are however alternative livelihood strategies to coping strategies⁴⁰:

- Prevention strategies reduce the risk of occurrence of crucial shocks or trends. Within agriculture such strategies can include producing improved livestock and/or improved crops immune to diseases, pests, certain weather conditions etc. The farmers in District #2 do not have the adequate assets to make use of such strategies in their livelihoods decisions.

⁴⁰ Farrington and Luttrell (2004)

- Mitigation strategies reduce the potential impact of crucial shocks and trends. Within agriculture these can include using different agricultural methods for one type of crop, and/or investing in some sort of insurance (formal or informal). This strategy does not reduce the risk of a shock's occurrence, but reduces the impact once it occurs. The farmers in District #2 do sometimes, to some extent, implement such strategies in their livelihoods decisions. By doing their own yield analysis of new agricultural methods and traditional agricultural methods on the same plot, they reduce the risk of one of the methods failing, and at the same time reduce the necessity of the use of coping strategies. Other types of mitigation strategy are the kuu labour system and the susu saving clubs, as insurances for labour and finance respectively⁴¹.

5.2 The main needs of poor farmers in relation to research and training

5.2.1 Training needs

Because of the tradition in Grand Bassa of never having been farmers coupled with the knowledge- and training-gap resulting from the 14 years of war, the farmers' needs begin with very basic farming methods knowledge. The farmers listed the following needs in relation to farming training⁴²:

- Training on the farming calendar
- Training on different soil qualities, and where to plant which crops
- Training on the food crops root and tuber crops and rice
- Training on pest management
- Training on cash crop farming, e.g. rubber, cocoa, pineapple etc.
- Training on raising of livestock like goats, sheep, pigs, and foreign chickens

Between the secondary and the external stakeholders the following additional training needs were identified:

- Training on seed multiplication
- Training on rotational crop farming and soil fertility management
- Training on organic compost making

⁴¹ See section 5.6 for details on the kuu system and susu clubs.

⁴² The FRC is currently addressing all of the above mentioned needs through their different training approaches.

- Training on additional crops to cassava and rice; e.g. vegetables, plantain, hot pepper
- Training on how to raise alternative animals, e.g. rabbits, guinea fowls, giant snails etc.
- Training on post harvest loss management
- Training in additional farming related skills such as farm record keeping, literacy, agro-business skills, marketing, financial skills, distributional chain, etc.

While the farmers' identified training needs are based on their farming and market experiences of successes and failures and seasonal and annual constraints, the secondary and external stakeholders comprise of trained agriculturalists, academics, researchers, development experts and politicians. Their identified needs for the farmers in Liberia, Grand Bassa, and District #2 are based on their knowledge on the national market, and their environmental and technical knowledge, with increased food production and household sustainability as a main objective.

5.2.2 Research needs

At the stakeholder workshop for planning the future agricultural policy these reasons were identified for the low quality and productivity of the R&D institutions in Liberia:

- Lack of financial and technical support
- Suspension of bilateral and multilateral support since the outbreak of the war
- Inadequate governmental subsidies and investments in human capital from the Liberian government to such institutions

Charles McClain, Assistant Director General of CARI, called attention to the fact that agricultural research and extension will be crucial in achieving the objectives of food production, productivity and competitiveness.

Box 3: CARI comment on importance of transferring knowledge

“Strong linkages between research and extension will be sine qua non to achieve the key objectives of the Ministry of Agriculture’s Plan of Action. The priority and focus on availability of seeds and planting materials for the next planting season have raised the need for the process of transfer of knowledge and skills in increasing food and agriculture production, productivity and competitiveness for food security at household level, raising incomes and increasing exports.”

(Charles McClain, at extension workshop, 28.06.07, Thinkers Village, Liberia)

The statement in box 3 only stress the lack of agricultural research and the need for an increase of focus on the farmers’ needs in Liberia today. Because the FRC is geographically placed in the same climate conditions as the target group, the technicians can detect pests, deceases and other negative reactions to the conditions in District #2 that the imported crops are developing, and the best methods to avoid this from happening. The FRC’s role as the risk taker conducting all the research on national and foreign crops automatically reduces the risk to some extent for the poor farmers in growing the improved crops, and it is thus an important role in the work towards food security.

Structures and processes such as agricultural policies, private sector demand, and civil sector research and extension centers such as Concern’s FRC all have a potentially reciprocal relationship of influence with agricultural technology. One example of this is the high demand for hot pepper on the West African market. This, in addition to other such demands of Liberian export from the private sector led the MoA to focus greatly on the research on hot pepper and other cash crops, and thus the FRC will also be focusing on training the poor farmers in farming methods on such crops. The intention is to increase the farmers’ asset base in a way that will be sustainable long term. Furthermore, agricultural technology can also influence the structures and processes affecting farmers’ households by increasing farmers’ assets and hence increase their access to certain institutions, and even eventually change certain political or social structures regarding land rights.

The FRC is planning to include the FFS approach in their farmer training programme from 2008. Concern Liberia is currently just waiting for the Ministry of Agriculture

to complete the creation of a broad, general curriculum for the FFS in Liberia, which will include hot pepper growing and other cash crops as a main component, as the ministry's focus is export of where Liberia has a comparative advantage, and the farmers are interested in training on cash crops. The MoA are interested in cooperating with Concern Liberia on a new training programme for 100 farmers in 3 districts in Grand Bassa on hot pepper production in cooperation with the Ministry of Finance, the Ministry of Commerce, local NGOs, and International Trade Centre.

5.2.3 Focus on agriculture as a business

*"We want people to treat agriculture as business, not subsistence."*⁴³

The new approach to agriculture for the MoA is to try and commercialise the sector as much as possible. The government's main objectives regarding such commercialisation are to establish a sustainable farming environment by:

- Keeping the added value of the produce in the country by doing the processing there.
- Creating incentives for farmers to produce on a large scale, e.g. access to markets by building adequate infrastructure (including feeder roads).
- Facilitating the creation of farmer cooperatives. This can then cut the middle man in the produce-to-market chain as the producer can work directly with the farmer cooperatives through investment deals.
- Creating and upholding criteria for foreign investment. E.g. criteria of having to include diversification in-country regarding investment.

5.3 Details of poor farmers' expectations and understandings of the FRC

Most farmers rightly believe that the purpose of the FRC is to train the farmers in good farming methods. Although none of the farmers listed 'research' as why they think the FRC is in District #2, they are aware of the fact that the FRC is producing improved quality crops for the benefit of the farmers in the project towns.

However, there are some misunderstandings regarding the FRC's training methods and approaches. Several of the communities that the FRC has been working with

⁴³ James Logan, Deputy Minister for Planning and Agriculture, interviewed on 03.09.07.

since the start in 2004 seemed to be under the impression that they would receive something for the training - both for attending the workshops and for the extension services. Because of the recent and long state of emergency in Liberia, the farmers are used to receiving either food-for-work or cash for any aid organisation intervention. There are also a few INGOs that are still practicing these methods, and FAO distributed free seed rice as late as spring 2007 in Grand Bassa. The FRC is not paying the farmers in any form for cooperation in their development. But because of above mentioned reasons, and the fact that G-BAG gave out free seeds and crops when they were running the FRC, many of the farmers in District #2 wrongly accused the FRC staff for withholding money earmarked from Concern to the farmers.

Because of internal conflicts and arguments between and within some of the project towns, a few farmers have been misleading others by saying that Concern or the FRC have chosen only them to work with. When the FRC staff are not aware of such divisions and power imbalances, this can go on for some time before it is dealt with properly unless there are some tools for monitoring in place.

5.4 Details of which farmers utilise the FRC

5.4.1 Utilisation of the workshops

The numbers of farmers attending the monthly workshops are steadily increasing. The august workshop saw 88 attendants, including farmers from 36 towns. The FRC aims to train farmers from 60 towns, with 2 representatives (1 male and 1 female) from each town, but realistically (for reasons discussed in section 6.5) the FRC is planning the workshops for 75 farmers. Some of the towns send up to 6 farmers to the same workshops, which also makes the numbers add up without the distributional impact improving geographically.

Using the August workshop (the most recent workshop) as an example again, the male-female attendance was 63-25, out of the 36 towns there were 3 times more on-road towns represented than off-road, but there was an even representation of farmers from towns close to as well as far from the FRC. There are no figures regarding vulnerable groups such as sick, old, or injured people represented at the workshops.

The attendance records show that in several cases participation is not rotational; rather it is the same participants who are returning month after month. Out of the 16 towns visited for the research, 14 of them said that they had sent participants to the workshops at some stage since the start of the FRC.

5.4.2 Utilisation of the extension services

Out of the 16 towns included in the research only 5 of them stated to have been visited by the extension workers (including mobilisation and for training purposes) since the start of the project in 2004. The 5 towns that had been visited included both long and short distance towns, and off-road as well as on-road.

5.5 Reasons why some farmers do not utilise the FRC

5.5.1 The workshops

With respect to assets (time, health, and help from relatives or friends) the sick, old, injured, orphans, and single parent farmers are less likely to be able to reach the workshops – especially if there is a long distance to walk in order to get there. Women also have additional disadvantages as they are the ones who take care of the young children, the sick and elderly in the households, and many women (and their husbands) may find it too unsafe to walk such a long distance with a man, and then to stay overnight in a place away from home with strangers.

The rotational system is not always being upheld for a few different reasons. Firstly, if there are any conflicts or divisions between towns and their respective satellite villages, then the persons who are being mobilised about the workshops will not inform these villages and thus only send farmers from a small section of the intended beneficiaries. This is not only hidden from the extension workers and hence difficult to address, but also creating bad feelings with the excluded satellite villages towards the extension workers who they blame for being partial. Similar problems were found within towns, where the town chief and elders were mobilised, but they did not disseminate this information, or only included farmers that they themselves favoured. And again farmers blamed the extension workers for taking an excluding approach because the same farmers ended up participating at the workshops every month. Lack of monitoring of a rotational system at the workshops has allowed this to continue for a long time.

Several of the project towns visited for this study had never or not lately, according to the farmers, been mobilised by the extension staff, and thus did not know when the workshops were on, or even whether they could attend. Although the extension staff assured that they do reach all the 60 towns every month in good time before each workshop, the research showed that this is not physically possible for 2 staff while doing their extension work at the same time. And for the 3 months the research was conducted one of the motor bikes was broken, which made it even less viable.

The people of Grand Bassa were used to being able to work as paid labour in the mines, on the train rails and in the harbour for all the foreign investors that were there before the war, and thus they were never used to be farmers. Farming is physically hard and strenuous labour for very little in return, and there is an admitted reluctance to be full time farmers amongst the people in Grand Bassa. The geographical constraints are too great and too many for some of the farmers in order to reach the FRC. Especially in the rainy season it is common that the bridges connecting the towns to the FRC break down, and the heavy rain creates floods along the roads and paths.

5.5.2 The extension services

The above mentioned power balances within and between towns can also create difficulties for the extension staff, as they cannot reach every single little satellite village (some villages in Grand Bassa comprise of no more than 4 or 5 households), but have to rely on the chiefs to gather all the farmers within the town reach.

Out of the 16 towns only farmers from 5 of them stated that they had been reached by the extension workers. However, the visited towns covered a good geographical spread reaching towns both close to and long distance from the FRC. The reasons stated by the extension workers for not having reached as many towns as they intended to were that one of the 2 motorbikes had been broken for the last 3 months; the very bad condition of the roads; and the broken bridges that made access to some towns impossible. This clearly contradicts with their statements of reaching all the 60 towns every month. And a valid comment in this respect is that the Concern Health and Hygiene workers always managed to reach the same towns under all conditions.

5.6 Impact of the FRC on poor farmers' food production

To assess the impact of the FRC's training approaches on the farmers' food production it was necessary to translate the food production outcomes into vulnerability indicators to measure any decrease or increase in the farmers' assets. The chosen conceptual framework for the study was the Sustainable Livelihoods Framework. The study mainly looks at whether the training has increased the human and social assets, and if so, whether that has resulted in any increase of choices of alternative livelihood strategies for the farmers. Increasing the social capital in the towns of District #2 could have a positive impact on the individual farmers' vulnerability by reducing the risk of them adopting the new improved farming methods. Examples of social capital in the towns of District #2 are the susu-clubs and the organising of kuu systems. Susu clubs are locally organised self-sustaining saving clubs that makes medium sized loans possible, and kuu is a locally organised labour system which is rotational amongst the members' farms. However, these two types of organised group insurance were not found in all of the towns included in the research. It was found that the social capital had increased to some extent, as the people of FRC project towns would meet more often. It had not increased sufficiently though to decrease the risk for the individual farmer to adopt the improved agricultural methods.

Figure 15: Complete increased assets base as result of FRC training

Human capital	Improved planting methods	Knowledge on non-traditional crops	Knowledge on the farming calendar	Weeding	How to do seed multiplication	Fencing of crops
	How to use tools	Knowledge on H&H matters	Improved health			
Natural capital	Higher quality yields	Increased quantity yields	More seeds for next season	Organic compost possibility		
Financial capital	Income from farm produce					
Social capital	Organising of new Steering Committee	Townspeople meet more often	Communal plots of crops/risk-Taking			
Physical capital	Improved housing through increased funds	Increased number of livestock through breeding				

The human assets need to be applied to have an impact on the access to alternative livelihood strategies. If this was the case, the farmers' alternative livelihood strategies should improve their livelihood outcomes through access to increased income, education, improved nutritional level etc. Figure 15 presents the intended complete increased farmers' asset base as a result of the FRC training. The increased natural, financial and physical assets are based on the assumption that the human assets are applied.

The findings identify an increase of human capital. Most of the farmers showed an impressive knowledge regarding improved farming methods, the farming calendar, and alternative crops including cash crops. They were also aware of the positive difference in yield that the improved crops could give. However, very few of the farmers actually applied this knowledge, and thus the impact of the training on the farmers' food production is limited. This case study of the farmers in Liberia demonstrate that even when the farmers are adequately trained in improved agricultural methods and have seen what yields it can give, the risk is still too high and the high yields are being traded off for the security of a tried-and-tested farming system.

5.6.1 Identified organisational factors limiting the extent of impact of the training

- A lack of monitoring of the extension services.
Currently the extension services is not being utilised to its full capacity. The staff are based in Compound 2 and not the field, so they have to travel back and forth every day, and thus do not reach all of the project towns.
- Too many project towns for 2 extension staff.
- A lack of specific, time bound indicators for monitoring impact.

5.6.2 Identified factors limiting the application of the human capital

- The community approach to production projects (see section 4.8).
The fact that farmers do not want to work on communal projects were identified by both primary and secondary stakeholders. This is one of the main reasons for why many earlier projects have collapsed.
- A lack of follow-up and monitoring of interventions in project towns.

- Problems with the previous implementing partner until February -07 resulted in a lack of clarity of the FRC objectives amongst the farmers, and a lack of trust of the FRC. This point is particularly referring to the lack of clarity around whether the FRC will pay the farmers for cooperation on the town projects and for attending the workshops.
- The focus on the workshops is too large.
Currently the workshops include 50% theory and 50% practice (three hours per day respectively). For farmers who cannot take notes, and are not used to attending lectures the theory part is too challenging to follow. Thus the workshop approach only benefits a small group of the farmers.
- A lack of a sense of value of the training.
Because they are being paid the transportation fee (which cannot be used for transportation as there are no modes of transport between the FRC and the project towns), many farmers are accused by others of attending only for the fee and the food, and in having no interest in the training. This creates jealousy amongst the farmers in the towns. A very small fee for the training paid by the farmers for would assure a sense of value of the training.
- A lack of physical and financial access to markets for the farmers.
- The additional work load for the first season when applying the improved farming methods. Many of the farmers are not used to thinking several seasons ahead; they may not know where they are the next season – a fear resulting from high mortality and the recurring civil conflict in the past – and thus will not labour more than necessary for future profit.
- The risks of adopting new methods that requires unknown (to the farmers) labour amounts and results in unknown amounts of yields.

With the risk involved in applying new methods that will need more labour when planting and maintaining, without knowing for definite that it will lead to a good yield for that one specific farmer on that one specific plot, many farmers end up sticking to their traditional, known methods. As described, the vast majority of the farmers in District #2 do not have many assets to rely on, and are thus in a very vulnerable situation. The many shocks and few coping strategies of the farmers in District #2 are discussed above in section 4.2.

5.6.3 Types of risks faced by the farmers in District #2 regarding adopting improved methods

- Production risks caused by the pests destroying their crops, heavy rains from June to October, and uncertain performance of crops and livestock if new methods are applied;
- Price and market risks caused by the unpredictable and seasonal markets and prices of both agricultural inputs such as seeds and tools, and most agricultural produce including both cash crops and food crops. The unpredictability around these markets and prices are again caused by a variety of political (national and international), climatic, and geographical factors;
- Institutional risks caused by political factors such as trade policies, aid policies, agricultural policies, tax policies, investment in infrastructure etc.
- Human/personal risks such as death, illness, or accidents within the household, funeral costs, medical bills, family increase, school fee increase etc;
- Business risks caused by all the above mentioned types of risks;
- Financial risks caused by lack of access to credit, and lack of alternative job opportunities.

5.7 Distributional impact of the FRC on farmers food production

Figure 16: Distributional impact

Geographical	<p>Unequal impact for close and distant towns The workshop approach has a higher impact on closer towns, while the extension approach has an equal impact.</p> <p>Unequal impact for on- and off-road towns The workshop approach has a higher impact on on-road towns. For example at the August workshop there were 3 times more farmers from on-road towns than off-road towns. The extension approach has an equal impact.</p>
Gender	<p>Unequal impact for male and female farmers There has been a higher male attendance at all the workshops.</p> <p>No figures for extension services, but this approach intend to have an equal impact.</p> <p>3 of the 9 members of the Steering Committee are female.</p>
Age groups	<p>There are no figures for any of the approaches, but the researcher observed a good mix of young and old farmers at the August workshop.</p> <p>There is 1 Youth Representative in Steering Committee.</p>
Most vulnerable groups	<p>There are no figures for any of the approaches for e.g. disabled, orphan, sick or elderly farmers.</p> <p>These groups are not directly benefiting from the workshops. Although there are no figures, the extension services intend to reach these groups and have an equal impact on these groups' food production.</p>

5.8 Household focused interventions

So far Concern Liberia and the FRC have had a community focus on their training and production approaches. In Grand Bassa this has not proved successful, neither with the food security projects prior to the FRC, nor with the FRC's demonstration plots, production projects, or other interventions.

Box 4: Unpopular community work

"It is worth noting the often-repeated observation that "community work" is 'unpopular' in Grand Bassa. Observers of other Liberian counties, particularly Lofa and Nimba, comment on the zeal with which people commit themselves to "community"-based projects. This enthusiasm is less in evidence in the Grand Bassa context and may be related to the particular conditions of wage-labour opportunities in the past and to a coastal lifestyle that affords access to a fish-based diet."

(King, Rebecca 2005:5)

Through PRA and semi-structured interviews the farmers were asked whether they would prefer such community projects that they were familiar with, or household

projects where each household would get responsibility and ownership of one part (one plot, one goat etc.) of the town project. 100% of the farmers replied that they would prefer the household projects. Local agricultural NGOs like CAP and G-BAG have moved away from community projects long ago, and are now only doing household projects in Grand Bassa.

There is also an organisational risk of marginalising some groups of society by assuming that all groups are equal and will work together with equal input for equal output. If one does not know the culture well, such risks will not be foreseen, or mitigated, as revealed by the quotes in box 4 and 5.

“But not all co-operative labor is organized for or by members of the group. Chiefs or sodalities have a traditional right to command young men to offer their labor for community work—road maintenance, for example. This is a possible source of resentment, especially where not all those liable for such work take part. The children of the rural elite may be exempted from community labor by being away at school, for example. If those with client status escaped extreme poverty and subordination by joining a militia they are hardly likely to be enthusiastic about rejoining an unpaid labor crew commanded by community elders for CDD.”

(Richards, Paulet et al 2005:37)

5.9 Ownership of projects

There exists no ownership of the town projects. They are commonly referred to as FRC- or Concern-projects. By changing from a community approach to the household approach discussed above, the responsibilities for each farmer will be made clear and thus create an ownership. In Grand Bassa there is a proverb which is often quoted: *‘What everyone owns, no one owns.’* According to the farmers the reason for the collapse of the previous projects implemented after the war is that no one knew who were supposed to do the weeding on the communal plot, feed the communal pigs, or eat the harvest or meat when it was ready, so no one put any input into it. When the farmers do not have enough food or manpower for their own farms they need incentives to invest it in any additional projects.

5.10 Lack of monitoring and follow-up

It seems like there has been no monitoring or evaluations of the town projects/interventions so far. There is an annual work plan for the FRC, but regularly monitoring is not included, and neither are any indicators or means of verification for monitoring purposes. Many of the organisational problems stated above could be mitigated through continuous monitoring. Mitigation of the risks however, would have to be addressed as a separate issue. The conclusion will suggest approaches and specific activities for organisations working to increase food security by training farmers in improved methods can undertake in order to address both organisational issues as well as household level risks in agriculture.

6. Conclusion

This thesis has examined the current theories and ideas around the causes of low adoption rates among vulnerable, food insecure farmers in a developing country. Mentioned theories pose the hypothesis that in order to increase local food security it is necessary to include the elements of risk and vulnerability when attempting to improve the management of natural resources. The thesis has used a case study from Liberia, a highly food insecure country, to challenge this hypothesis through an in-depth understanding of the causes of low adoption rates amongst vulnerable farmers. Through this case study it becomes clear that the element of risk is extremely influential in vulnerable farmers' decision making process, and thus implies the importance of integrated risk reduction and mitigation aspects in development strategies. Risk reduction and mitigation involves decreasing the opportunity cost of adopting such improved farming methods, and making the improved methods accessible for vulnerable farmers with little assets.

“Information alone cannot bring about sustainable development and must also be supported by favourable policies, good markets, access to finance as well as an adequate resource base (farm household members and farm) upon which development can take place.”⁴⁴

6.1 Agricultural extension and risk theories assessed through the case study

The findings of the case study have thus rejected the theory behind the Diffusion Model presented by Stevens and Jabara, as this theory fail to identify the factor of risk and vulnerability. Even if the extension workers are from the area, and their work is of high quality, it can not automatically be assumed that an increase in the farmers' food production will follow. The model does not take account for the poor farmers' vulnerability to external and internal shocks and trends, which will have a major influence on whether the farm household adopts the new technology. The findings show that for vulnerable groups of farmers the risks attached to new, often labour intensive methods are simply too high to enable adoption.

⁴⁴ Kinsella (1996:1)

Although the Induced Innovation Model includes resources and technology (assets), and culture and institutions (processes, policies and institutions), also this model fails to include what the case study findings presents, namely that the farm household's vulnerability is a major factor influencing all levels of livelihoods decisions, as well as how external processes and institutions can have a positive or negative influence on the vulnerability context.

Based on the findings from Liberia, it becomes clear that Hardaker et al's decision-making model falls short, as it omits the important factors of the farmer's age, experience, values and risks as influencing factors. These factors were proven to be of high importance for Liberian farmers when making significant decisions. By identifying the cultural dimension as a crucial factor regarding farmers decision process, and hence whether improved methods are adopted or not, Barrett et al's model of decision-making is confirmed as the most suitable model for examining the Liberian situation. This is also verified by the cohesive focus on the introduction of farmer-led, local-specific extension approaches like the FFS by the Liberian stakeholders. Based on these results the thesis will suggest some recommendations on how to increase the impact of agricultural extension services.

Box 6: The need for a new extension approach

"In the past, decision were made by researchers and extension officers in the offices and then taken to the farmers to implement. We sit in our offices and decide that we need to introduce a new variety of rice without considering whether farmers want to plant rice or not. Because of this, there was no ownership and farmers would let the project to die. For us as Liberians, the benefit of the war is that we will see extension in a new way. We need participation in Liberia at all levels. This workshop will help us to highlight what the strategy for extension will be. Hopefully this strategy will help us to implement what we can consider as a new paradigm. This new paradigm is already seen in the FFS approach, as it is showing us that farmers have good ideas and that it creates ownership of projects by the farmers. We want to see extension moving towards using FFS."

Deputy Minister of Agriculture, Extension and Research Lworpu Kandankai, at extension workshop, 28.06.07, Thinkers Village, Liberia

6.2 Recommendations on how to make improved methods accessible for everyone

In order to make improved farming methods accessible to all groups of farmers, including the most vulnerable groups, there are certain elements necessary in a strategy. These elements are stressed by all the addressed stakeholders from the primary research as well as by all of the recently written theory on the subject of risks and vulnerability regarding adoption of agricultural technologies.

6.2.1 The need for farmer-led, culture specific extension approaches

To make improved farming methods more accessible the training approaches must be based on the farmers' needs, and tailored to how the farmers prefer to address these needs. This can be ensured by conducting an ex-ante needs analysis in conjunction with the target group, and by involving the beneficiaries in the project identification, planning, implementation, monitoring and evaluation. And through an ex-ante participatory decision analysis the development organisation can better reach an understanding of how the farmers prioritise when making important decisions. It is important for any development organisation to treat outlined policies and strategies only as guidelines and not as blue prints to facilitate participatory development on all levels, in order to achieve a maximum impact from the development interventions.

6.2.2 Participatory training methods

Because training farmers is training adults, the extension workers need to follow the principles of adult education, presuming that the farmers already inhibit a huge amount of knowledge and experience. The farmers in developing countries have not necessarily had access to any formal education either, and thus are not used to being in a class room situation. By taking the training into the farmers' own fields, where they feel comfortable and can better identify their needs, as well as participatory address the problems, the farmer can learn by doing in stead of watching, in an informal, non-intimidating manor.

Box 7: How participatory education creates ownership

If I hear it, I forget it.
If I see it, I remember it.
If I discover it, I own it for life

Adapted from Gallagher 1999

6.2.3 Creation of ownership

It is important to create a sense of local ownership of development projects. If the beneficiaries view the projects as not belonging to them, there is less of a chance that the beneficiaries will take any responsibility for implementing, maintaining, monitoring or evaluating the project. By giving people responsibilities coupled with incentives, one creates a sense of ownerships and thus commitment.

6.2.4 Creation of access to credit

Access to credit is crucial for boosting food security as it increases access to markets and hence creates incentives for increased agricultural production for vulnerable farmers. It reduces susceptibility to shocks as well as enables farmers to begin trading in new commodities that require more start-up capital. Access to credit can also prevent poor households from make use of other coping strategies such as selling or mortgaging of productive assets such as livestock, land or labour. Thus facilitating access to credit should be incorporated in development strategies that are focusing on farmer training to increase food security, to attain maximum impact.

6.3 Specific recommendations for Concern Liberia's project

6.3.1 FFS as main approach

Concern would benefit from applying the FFS approach to farmer training as a main approach, replacing the farmer workshops and traditional extension approaches, both because this will be the main approach for the public sector, and because it will move the farmer training to a more familiar and easier accessible place for the farmers.

Below are quotes from some of the farmers that I met with, regarding why they would prefer an increased focus on the extension services or increased focus on the farmer workshops:

Box 8: Farmers' quotes on importance of extension services

We want the extension workers to come to our towns because:

"It will strengthen the knowledge we get from the workshops."

"More people will benefit if the training happens in our town."

"We don't always trust the people coming back from the workshops."

"The people coming back from workshops don't always share their new knowledge"

6.3.2 Household focus in project towns

It is clear from the findings that the community-focus is not promoting development in District #2, and hence Concern Liberia needs to move away from that particular approach to training of farmers. In development it is true that one solution does not fit all. A Liberian proverb says '*A goat's head is not a sheep's head*'. It simply means that people are different and needs to be dealt with differently.

6.3.3 Credit systems for seed and livestock

In stead of selling the improved seeds to the farmers, as the FRC is currently practicing, the FRC could create credit systems where the farmers will receive seeds and/or animals free of charge, but will have to pay it back with a small interest to the FRC. This would create sustainability for both the farmers and the FRC. The small interest will create an incentive for the farmers to produce more, and would function as a seed bank/livestock reservoir for the FRC. Not only will such a project create a sense of ownership of the FRC projects, it will also decrease the opportunity costs of adopting new agricultural technology, as the FRC supplies the input. A credit system like this will also make adoption of improved methods possible for all groups of farmers on all vulnerability levels.

6.3.4 Change of workshop approach

Some of the current activities should be re-examined if the workshop approach is continuing:

- The FRC needs to stop paying transportation fees to the farmers in order to create a sense of ownership.
- Incorporate more practical training and less theory.
- Assist the town chiefs and Steering Committee in producing monthly participator-lists for each town to reduce the need for monthly mobilizing.
- Include visual aids (posters, pamphlets etc.) in the training approaches.

6.3.5 Reduce number of project towns

Reducing the number of project towns will improve the quality of the impact, and it will make it more viable to reach the FRC's target of distributing improved crops to project towns. The fact that the extension workers are based on the FRC grounds

and not in the field is also retarding the possible impact of their work, and it would be beneficial to base them in one cluster of project towns each.

6.3.6 Increase monitoring

By creating a separate annual logframe specifically for the FRC, including short-term objectives and targets; specific, time bound indicators; and means of verification, as well as identification of who is responsible for the monitoring of different elements, it will be easier to facilitate the monitoring of the different development activities undertaken by the FRC. In a majority of the project towns visited during the research, all of the FRC projects were not in function any more. It became clear that they had never been followed up or monitored properly by the FRC, and hence the farmers had, from lack of guidance and advice on how to keep them going, let them get ruined.

6.3.7 Create of access to credit

As Concern Liberia does not currently have a micro finance programme, the best way, according to the interviewed farmers, that Concern Liberia can do this would be either through a local partner organization that have experience in such, or through the already existing indigenous susu saving clubs.

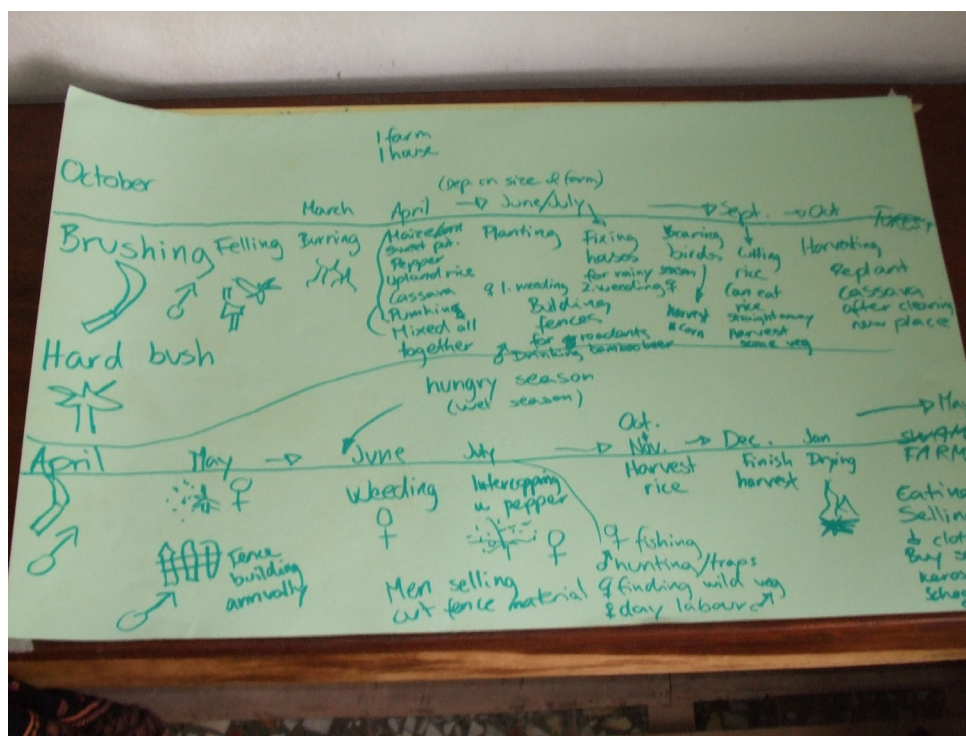
6.4 Anticipated contribution to development work

This thesis will contribute to food security studies as a discussion of the hypothesis stating that in order to increase local food security it is necessary to include the element of risk and vulnerability when attempting to improve the effectiveness of natural resources management. The case study will have the advantage of focusing only on one district in rural Liberia, and hence be able to apply a qualitative, observing research approach for an in-depth study of the hypothesis. The research findings will hopefully enlighten the reader's understanding of what elements needs to change within extension approaches to improve the currently low adoption rate of improved agricultural methods, and thus be of value for future development interventions targeting the issue. The case study approach of the research provides evidence to verify this hypothesis, and aims to present information that can be generalised for other similar settings and contexts.

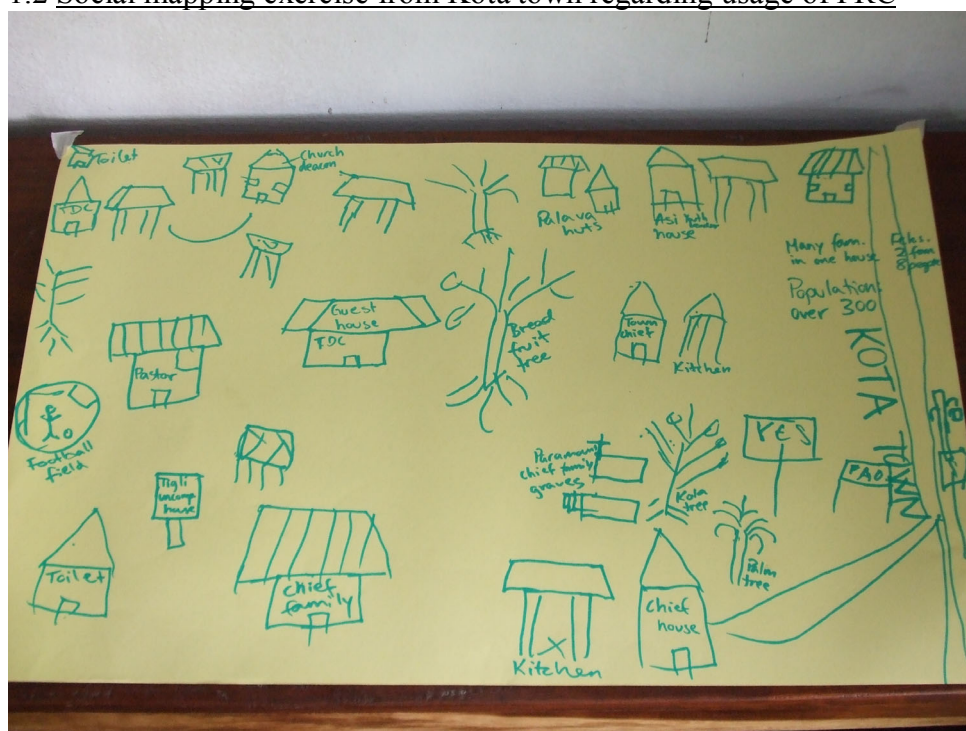
Appendices

Appendix 1: PRA exercises

1.1 Seasonal calendar from Kota town regarding usage of FRC



1.2 Social mapping exercise from Kota town regarding usage of FRC



1.3 Problem identification and ranking in Kota town by male focus group

	No power saw	Late seed distribution by FAO	No rice mill	Pests damaging the crops	No traction animals
No power saw		No power saw	No power saw	No power saw	No power saw
Late seed distribution by FAO			No rice mill	Pests damaging the crops	No traction animals
No rice mill				No rice mill	No traction animals
Pests damaging the crops					No traction animals
No traction animals					

Ranking results:

No power saw: 4

No traction animals: 3

No rice mill: 2

Pests damaging the crops: 1

Late seed distribution: 0

1.3 Problem identification and ranking in Kota town by female focus group

	No power saw	Late seed distr. by FAO	No rice mill	Pests damaging the crops	No traction animals	Seasonal hunger	No access to credit	Lack of cutlasses	No European roosters for breeding
No power saw		No saw	No saw	No saw	No saw	No saw	No saw	No saw	No saw
Late seed distr. by FAO			No rice mill	Late seed distr.	No traction animals	Seasonal hunger	No access to credit	Lack of cutlass	Late seed distr.
No rice mill				No rice mill	No traction animals	No rice mill	No rice mill	No rice mill	No rice mill
Pests damaging the crops					No traction animals	Seasonal hunger	No access to credit	Lack of cutlass	Pests
No traction animals						No traction animals	No traction animals	No traction animals	No traction animals
Seasonal hunger							Seasonal hunger	Seasonal hunger	Seasonal hunger
No access to credit								No access to credit	No access to credit
Lack of cutlasses									Lack of cutlass
No European roosters for breeding									

Ranking results:

No power saw: 8

No traction animals: 7

No rice mill: 6

Seasonal hunger: 5

No access to credit: 4

Lack of cutlasses: 3

Late rice seed distribution by FAO: 2

Pests damaging the crops: 1

No European rooster for breeding: 0

Appendix 2: Stakeholder workshop in District #2

Plan for stakeholder workshop in Compound #2, District #2

Plan for Stakeholder Workshop in Compound 2

Friday 13.07.07

11 a.m. – 2 p.m.

1. Introduction of facilitator
Objectives of the Stakeholder Workshop
Introduction of the participants
2. Participatory stakeholder listing and analysis of stakeholders of the FRC and their interests
3. Participatory problem identification and analysis of the problems the main stakeholders encounter in District #2
4. Participatory identification of how the FRC are currently addressing these problems through their research and training

Participatory identification of if, and how, the FRC can realistically address these problems better in the future
5. Thank you

2.2. Stakeholder list and interests

Stakeholders	Interests
Primary stakeholders	
The farmers in District #2	<ul style="list-style-type: none"> • Access to markets • Training in farming practices • Access to extension services • Access to affordable farming tools
Traders in the county	Access to markets for themselves and the farmers
Concern Liberia	Improved food security for the farmers in District #2
Secondary stakeholders	
The police	To keep the area safe
The DDC	<ul style="list-style-type: none"> • Increased development in the district • Good cooperation between DDC and Concern Liberia

2.3 Problem identification and analysis

Problems identified:

- Not enough extension workers
- Too big focus on the farming workshops, as many towns are too far away to be able to attend them
- Too large focus on food crops. The farmers also want to focus on cash crops like rubber production to add to their subsistence farming, and thus create more sustainable livelihoods
- Some farmers have no boots for swamp work
- Birds and rodents (pests) damage the crops
- A lack of awareness of the farming workshops, and the FRC purpose
- There has been a lack of training to follow up projects, leading to old projects not being sustainable

2.4 Identification and analysis of possible solutions

Possible solutions identified:

- Employing more extension workers to reach more towns more often.
- To increase attendance of stakeholder workshops it was suggested that Concern should compensate the participants for their lost opportunity-costs and their travel costs. This would not be as an incentive, but a means to make it possible for representatives from as many towns as possible to attend the workshops. The suggested compensation was 5 USD per workshop.
- Another suggested solution to how the FRC can address the problem of representatives not being able to travel all the way to the workshops, is to implement their extension services through different, more participatory and farmer-led approaches.
- The FRC can provide training in rubber tree production, but the problem is to find labour for the production.
- The suggested solution to how the FRC can address the farmers' problem of a lack of boots for swamp farming was to distribute or lend boots directly to the towns in need.
- The suggested solution to the farmers' problem regarding rodents is to train the farmers in good practices regarding fence building to protect their crops. Regarding the bird problem the farmers suggested that the FRC would distribute, or even just make available, bird nets.
- One suggested solution to the lack of awareness of the workshops and the FRC purpose was to re-organise a steering committee for the FRC. This has earlier been a good way of cooperation between the project towns and the the awareness of the FRC and its services and purpose.
- The lack of training that has damaged the sustainability of many of FRC's old projects should be addressed by the new steering committee.
- To avoid wasting resources in the future by starting projects without giving the adequate training, Concern should conduct a needs-assessment in every town they intend to start a project in.
- FRC. The re-organising of a steering committee should hence aim to increase

Appendix 3: Focus group discussion topics

Focus group topics

1. What crops and/or livestock are you farming?
2. Is the farm produce for selling or consumption or both?
3. Are there any other ways of creating an income in this town?
4. Have you ever heard of the FRC?
5. Have you been in contact with the FRC?
If so how, when, and how often?
6. What type of farming would you like the FRC to train you in?
7. How do you think the FRC can best conduct their training?
Why through this approach?
8. Have anyone from the FRC ever asked you for advice on how to improve their services?
If so, when was this?
9. What do you think the purpose of the FRC is?
10. Are you applying any of the farming practices that the FRC have taught you?
If so, has this changed anything in your crop yield?
11. What problems did you encounter in the last 12 months in this town?
If so, when was this?
How did this affect you households and/or town?
How did you compensate for this?
12. Have you noticed if involvement with the FRC has led to any changes, good or bad, in people's lives?
If so, do you think that the changes may affect how the problems identified above will affect your household or not?
13. Have you noticed if involvement with the FRC has led to any changes, good or bad, in people's lives?
14. If so, do you think that the changes may affect how the problems stated above will affect your household or not?

Appendix 4: Key informant interview topics

Key informant interview topics

1. What is the objective of your organisation regarding agricultural development?
2. What would you say are the major constraints or challenges for the farmers in Liberia/Grand Bassa/your district?
3. Which approach(es) are you using for your extension activities?
4. What lessons have you learned regarding your approach to agricultural development?
5. Which approaches have been successful for your organisation regarding agricultural development?
6. What do you think of the farming workshop approach that the FRC is using?
7. Is your organisation focusing on individual farmers or on farming communities? What are your reasons for this choice?
8. What impacts have you noticed from your work within agricultural development?

Appendix 5: Map of Liberia



Source: Humanitarian Information Centre for Liberia (HIC), Map catalogue LIB001, 19 March 2004

Appendix 6: Map of Grand Bassa County and District #2



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