

Using Integrated Pest Management-Farmer Field Schools as ‘Developmental Relief’—

A Field Report From Liberia

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Introduction

External assistance plays a vital role in mitigating the effects of chronic poverty. The notable humanitarian tragedies of the early 1990s focused attention on how to respond effectively. Failing to respond effectively can best be understood in terms of the incompatibility between the responses being extended and the variety of problems being addressed (Hendrickson (1998). Humanitarian aid was not conceived to solve the problems it is now expected to tackle. Although much has been written on immediate relief and longer term rehabilitation, there is a paucity within the literature on the transition between short-term and long-term activities or on approaches that integrate short-term relief and long-term development at the outset (Eberdt (2003). With protracted humanitarian crises¹ caused by chronic conflict, donors, agencies, and independent contractors have questioned the potential for relief aid to cause more harm than good by creating dependency and potentially feeding into conflict (Atkinson (1997; Goodhand (2003), Schafer (2002). Furthermore, some practitioners feel that the relief stage is particularly important as communities and households in post-catastrophe situations risk becoming dependent on short term aid activities in the absence on a transition to long-term planning (Eberdt (2003); O’Keefe and Kirby (1997).

The shortcomings of current understandings of and responses to situations of protracted instability have gradually led to discrediting the concept of a linear progression as an inappropriate approach (Schafer (2002); White and Cliffe (2000). In lieu of the relief-development continuum, a more recent concept embraced by humanitarian and development practitioners, is that of ‘developmental relief’ (ICRC (1996); Schafer (2002). Developmental relief is rooted in the concept of *supporting livelihoods* rather than simply providing basic relief. The Food and Agriculture Organization of the United Nations (FAO) noted that development objectives should not be set aside during emergencies; they need to be maintained throughout the emergency and should incorporate elements of prevention and preparedness which reduce susceptibility to disasters (FAO (2002).

Through the use of a case study, this article is intended to challenge the way we think about humanitarian assistance during protracted political instability. This field report focuses on how one organization, the Sustainable Agriculture and Rural Development Initiative (SARDI) of the United Methodist Church, has used the Integrated Pest Management-Farmer Field School format to provide developmental relief to four villages in Nimba County, Liberia.

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¹ Oxfam Great Britain defines a humanitarian crisis as ‘any situation in which there is an exceptional and widespread threat to life, health or basic subsistence, that is beyond the coping capacity of individuals and the community’ Oxfam (2002). However, the problem with chronic conflict is that the situation remains ‘critical’ for so long that the ‘norm’ is in effect redefined. What would be a situation so severe as to demand an exceptional (humanitarian) response is judged not by any absolute standard but in relation to what has become the norm for that context. The threshold for response becomes raised Schafer (2002).

Social and Political Context

Although Liberia was a relatively politically calm and economically thriving country, domination over indigenous tribal peoples by freed American slaves resulted in tensions that simmered beneath the surface until 1980. By the late 1980's, lawlessness and economic collapse led to the breakdown of the Liberian state and the growth of private armies and dissidents vying to attain control. When Charles Taylor, Liberia's current president, launched a war against Doe in 1989, his "method was to exploit the genocidal rage of the *Gio* and the *Mano*, the two tribes that had suffered the most under Doe's *Krahn* tribe" (Berkeley (1992). The random killing of Liberians by these factions began on December 24, 1989 when Taylor's National Patriotic Front came across the border from Côte d'Ivoire to Nimba County, eventually overthrowing Doe. More than a million people—about half the country—abandoned their homes (USDOS (2003). Nimba County—the location of this case study—was at the epicenter of this conflict that resulted in the near genocidal decimation of the *Mano* and *Gio* ethnic groups (HRW (1990). Officially, fighting ceased in 1997 only through the intervention of the Economic Community of West African States (ECOWAS) under the auspices of the Economic Community of Cease-Fire Monitoring Group (ECOMOG), leading to the election of Taylor as president (Sirleaf (1998); USAID (2002).

Peace did not prevailed under Taylor's presidency. Despite an agreement to end the war, there have been recurrent outbreaks of rebel fighting along the borders with Sierra Leone, Guinea and Côte d'Ivoire since 1999, and sporadic internal conflicts since 1999. Some 700,000 refugees remained in limbo in neighboring countries (USAID (2002). Unemployment and illiteracy stood above 75%, and little investment was made in the country's infrastructure (USDOS (2003).

Despite the recent democratic elections, Liberia continues to face overwhelming challenges. The 1989-1997 civil conflict had grim results: a total collapse of all democratic and socio-economic institutions; the loss of approximately 250,000 (including civilians, of which a disproportionate number were the elderly); and the displacement of over 2 million people into refugee camps in neighboring countries and internally (Daieh (2003); USDOS (2003) from a total population of approximately 3.2 million. This has resulted in the loss of a significant knowledge base. People with sufficient means fled to other African counties, Europe and the United States to pursue livelihoods there. Liberian gross domestic product is US\$410 million with a debt burden of US\$3.1 billion; per capita income is approximately US\$170. Annual population growth is 2.7 percent, with infant mortality at 235 per 1000 live births (UNDP (2003). The probability at birth of not surviving to age 40 (200-2005) is 47.2 percent (UNDP (2003). Liberian women have an average of 6.2 children (USDOS (2003). The average life expectancy at birth is 41.4 years (UNDP (2003). These are extremely formidable obstacles to improving the standard of living.

The reality of the situation is that people live in almost constant uncertainty of the future. While there may be several years of relative peace, no one is ever certain that it will last. The processes that keep households in chronic poverty are unlikely to change suddenly in the event of a peace settlement. The effects of conflict are felt for many years after the fighting stops, and many of those who were chronically poor during the war are likely to remain so during the peace. Liberia's economy and environment as well as people's livelihoods are worse off today than they were decades ago (Garnett and Utas (2000). Particularly troubling is that Liberia continues to experience the same problems of political and economic exclusion that contributed to the 1989-1997 conflict (Goodhand (2003). To conclude, Liberia is dependent on outside assistance for the provision of virtually *every* public good and service².

² The European Union is Liberia's largest donor, followed by the United States, which provides one-third of the total assistance provided to Liberia (Garnett and Utas (2000); USAID (2002). Other major donors include Britain, Canada, Denmark, France, the Netherlands, Sweden, Taiwan, the United Nations, the World Bank, and the International Monetary Fund. Donor activities include: assistance to improve democracy and governance, basic health care, making social services available to resettled populations, training ex-combatants, psychological care for former child soldiers and those affected by the war, re-establishing health and educational institutions, feeding vulnerable groups, constructing housing, income

This is why an evaluation of the efficacy of interventions intended to enhance people's ability to recover and support their livelihoods in a manner that improves their quality of life and the quality of their natural resources, is essential.

Since 1997, relief and development agencies in Liberia have gradually had to adapt their programming and implementation in rural areas due to the realities of continuing to work in dynamic environments. However, many development agencies in Liberia, as in other chronic conflict settings, have until very recently been reluctant to overtly acknowledge the need to adapt approaches, programming, and implementation to the realities of conflict (Bishop (2002); Bonkuo (2003); King (2002); Wonyenneh and Kokeh (2003). Frequently in Liberia, development agencies simply evacuate staff or cut off funding with the intention of reinitiating programs when "things settle down." A few long-term agencies have adapted their programs to the unstable nature of their setting by supplying seeds (or other basic necessities), shifting to working in refugee camps, and offering training for women and orphans (Adevu (2002); King (2002); Waines and Waines (2003).

Integrated Pest Management-Farmer Field Schools and Implementation in Liberia

Liberia's abysmal conditions provided the impetus for the United Methodist Committee on Relief (UMCOR) to initiate an intervention program. In 2001, UMCOR funded an 18-week Integrated Pest Management-Farmer Field School (IPM-FFS) through its Sustainable Development and Rural Development Initiative (SARDI) program to respond to the ongoing environmental and humanitarian crises in Liberia based on the 'developmental relief' paradigm. While the IPM-FFS is not a new concept, it has not typically been used as a form of developmental relief. Previous applications throughout the world have been in relatively peaceful settings.

The IPM-FFS model emerged out of a decade of experimentation in implementing participatory farmer training activities in the Philippines beginning in the late 1970s by the United Nations Food and Agriculture Organization (FAO). Refinements in the Philippine program and a new major effort in Indonesia in the late 1980s led to the birth of the FFS movement (Pontius (2000). It was introduced in West Africa in 1995, and has been implemented successfully in Ghana (Adevu (2002).

While the name, Integrated Pest Management-Farmer Field School implies that it is concerned with teaching farmers to manage agricultural pests, the actual program is much broader in scope. The educational philosophy of the IPM-FFS rests on the foundations of adult non-formal education—the field is the classroom and learning is by doing—and reflects the four elements of the 'experiential learning cycle': 1) concrete experience, 2) observation and reflection, 3) generalization and abstract conceptualization, and 4) active experimentation (Kolb (1984).

Operationally, the IPM-FFS are organized around a season-long series of weekly meetings focusing on biology, agronomic and management issues, where farmers conduct agro-ecosystem analysis, identify problems and then design, carry out and interpret field experiments using IPM to non-IPM comparisons. This reduces the risk involved in self-experimentation and empowers people who have not had access to formal education. In addition, the IPM-FFS also includes a significant focus on group and individual capacity-building (e.g., developing human and social assets). The longer-term empowerment goals of UNFAO IPM-FFS model seek to enable graduates to continue to expand their knowledge and to help others learn and to organize activities within their communities to institutionalize IPM practices.

The IPM-FFS has a proven record of success in many other lesser-developed countries, including West African settings (Adevu (2002); Bartlett (2000); Bartlett (1998); Kenmore (2002); Ooi (1998). Farmer empowerment; the conservation of biodiversity; food security; community education; the protection of human health; and policy reform have all been explicit part of these programs. These multiple objectives have arisen from a growing recognition among governments, non-governmental

generation (vocational training), and most significantly related to this research-- improving food security (agricultural training and rural development programs) and rebuilding capacity.

organizations (NGOs), donors, and participants, of the interdependence of different aspects of development, and the need to put people at the center of the development process (Bartlett (2000)). These *same* concerns have given rise to the concept of 'sustainable livelihoods' (Chambers and Conway (1992)), 'community design' (Sanoff (2000)), and 'regenerative design' (Lyle (1994)). Although IPM training programs were being implemented globally prior to the widespread use of livelihoods terminology, the current concept of sustainable livelihoods accurately describes what is going on in these programs. Within an IPM-FFS program, participatory approaches (including farmer-to-farmer training) are being used to transform a range of assets (including natural, human and social capital) into a number of livelihood outcomes including security of incomes, food supplies and health, and improvements in rural settings (Bartlett (2000)). SARDI hoped that the IPM-FFS would accomplish similar objectives in Liberia.

Since 2000, peace had prevailed in the Ganta, Liberia region. A variety of NGOs were implementing training programs in health education, agriculture, environmental issues, and other topics. In 2001, The United Methodist Church Committee on Relief formed a new program—the Sustainable Agriculture and Rural Development Initiative (SARDI)—aimed at assisting rural households in five West African countries to improve their quality of life and local landscapes. Because of the prolonged stability and the continued need by rural households for external assistance, the Ganta United Methodist Agricultural Program (GUMAP), in coordination with the West Africa Regional Coordinator for SARDI, decided to implement the IPM-FFS in Liberia. In addition to the training (development) component of the IPM-FFS, the relief component of 'developmental relief' included the distribution of vegetable seeds and a set of tools for each group to use during training.

The curriculum for the Liberian IPM-FFS was based on addressing the primary vulnerabilities faced by households resulting from biophysical conditions of local landscapes and the needs and limitations of rural households in terms of their assets. Slash-and-burn agro-ecosystems are an integral part of Liberian smallholders' livelihood strategies and constitute about 90 percent of total rural households' land uses (Bonkuo (2003); Kromah (2001)). Agricultural crops represent the primary livelihood strategy of Nimba County households. They also represent an important set of impacts to tropical soils. Soil organic matter generally declines during the cropping period because of increased decay and limited replacement. A decline in soil organic matter leads to increased acidity, lowered nutrient levels, degradation of soil structure, reduced porosity and aeration, and lowered water infiltration capacity (Kleinman, Pimentel and Bryant (1995)).

Sustainable practices in agro-ecosystems, therefore, typically focus on the primacy of maintaining soil quality and avoiding soil degradation by optimizing the use of locally available resources and using external inputs in a complementary and efficient way. This approach, called 'low-external-input and sustainable agriculture' (LEISA), involves practices of soil and water harvesting, agroforestry, integrated pest management, intercropping, crop-livestock integration, microclimate management and the use of local species of animals and plants in food production (Reijntjes, Bertus and Waters-Bayer (1992)). LEISA builds on a combination of people's local knowledge (e.g. human capacity), ecologically-oriented agriculture developed elsewhere, and scientific insights into agro-ecology (Reijntjes, Bertus and Waters-Bayer (1992)). LEISA does not aim at maximal production of short duration but rather at a stable and long-lasting production level. This reduces household vulnerability to malnutrition and to two primary biophysical sources of vulnerability concerns to Nimba County farmers—pests (e.g., grasshoppers) and soil quality. LEISA maintains and, where possible, enhances the natural resources (Reijntjes, Bertus and Waters-Bayer (1992)), thereby achieving positive outcomes to the natural environment.

The LEISA practices selected for the IPM-FFS curriculum were largely based on GUMAP extension staff experience and knowledge of the resources, needs, and vulnerabilities of local smallholders; these included:

- Composting;
- Slash-and-mulch;
- Farm yard manure (FYM);
- Multi-cropping (utilizing land for more than one cropping enterprise at the same time);

- Intercropping³ (planting more than one crop in a row or alternating rows);
- Trap-and-decoy crops⁴;
- Neem (*Azadirachta indica*⁵), a plant-derived pesticide.

The second approach to the Liberian IPM-FFS included two productive conservation practices. Productive conservation is part of a socially and ecologically progressive approach intended to arrest deforestation and provide an additional revenue stream to smallholder households (Brown (1999); Hall (1997). That is, in the context of providing developmental relief, productive conservation strives to develop economically viable and ecologically responsible ways of diversifying households' livelihoods. Ideally, productive conservation leads to economic development among subsistence-level households with conservation of humid forest ecosystems. The Liberian IPM-FFS included beekeeping and domestication of indigenous African land snails [snail farming]. Although both the beekeeping and snail practices have many advantages, SARDI and GUMAP staff recognized that the potential participants in the IPM-FFS program would have considerable difficulty implementing these practices on their own. These constraints were acknowledged to be the lack of financial and physical resources at their disposal, as well as the novelty of the practices. These anticipated constraints serve to introduce the final goal of the IPM-FFS program.

Recognizing the need to achieve substantive and enduring impact, the UNFAO IPM-FFS model explicitly focused on issues of local institutionalization during the training, both in terms of changes in individual behaviors regarding adoption of IPM practices, and in the development of supportive organizational structures. Similarly, UMCOR and the SARDI West African Regional Coordinator recognized that chronic conflict and political instability destroys social capital, particularly elements such as bonds of trust within communities, social networks, shared social norms and rules, and relations of reciprocity (Schafer (2002). As a result, the final goal of the IPM-FFS in Liberia was that the training would lead to organized group action for making better use of existing resources and the development of new skills. In other words, it was hoped and anticipated that the group of participants in each village would form a solidarity (community-based) organization that would work on projects together (e.g., generate income for the group to be reinvested into increasingly larger projects); recruit additional members to the group, form a cooperative marketing organization, teach other farmers the practices they learned (exemplar group, trainers of others in village), and perhaps develop their own micro-credit scheme. This would bolster smallholder households' conservation investment potential by enhancing their levels of social capital in the short term, and financial capital in the long term.

Discussion

The goal of a developmental relief program is to be able to support livelihoods and help people achieve their aspirations. The primary aim of this case study was to understand the following:

- What agricultural practices were adopted or not adopted and why?
- How does uncertainty influence household decision-making?

³ Intercropping offers farmers the opportunity to engage nature's principle of diversity on their farms (Lyle (1994); van der Ryn and Cowan (1996). Intercrops can be more productive than growing pure stands. Pest management benefits can also be realized from intercropping due to increased diversity.

⁴ Trap crops of susceptible plants are grown on land known to contain pathogens. They become infected and are then destroyed before the pathogens' life cycles are complete. Decoy crops stimulate the hatching or germination of pathogens, but the pathogens are unable to establish. In Liberia, corn was grown at the edges of bunds on swamp farm plots to limit the number of grasshoppers entering the interior of the plot. Corn was a less valuable crop and only consumed as an emergency food. The ideal decoy crop is one that has economic value and can be used in a routine crop rotation.

⁵ Neem leaves are dried in the shade, because ultra-violet rays from the sun break down the active ingredient. Dry leaves are crushed to a powder in a mortar and pestle. They can then be used directly for dusting crops. The powder can also be mixed with water and sprayed (Dreyer (1984).

Two dominant themes emerged as the IPM-FFS participants reflected on their experiences with the agricultural practices: 1) whether or not they felt the practices were compatible with perceived or real vulnerability; and 2) the role of limited household assets in promoting or inhibiting adoption.

Adoption/non-adoption in relation to vulnerability

One of the most poignant characteristics of the Liberian respondents is not just their extreme poverty, but also their vulnerability to many hazards, including basic safety, loss of income, assets, and health. Vulnerability occurs from multiple sources: chronic conflict and political instability; lack of security within communities (high incidence of petty theft); biophysical; and cultural beliefs and power relations. The agricultural practices taught during the IPM-FFS were aimed at alleviating vulnerability. Concerns about each type of vulnerability were significant determinants of adoption. Some of the practices, however, *increased* people's vulnerability. For example, allocating some portion of time, land, and labor to the cultivation of vegetable crops for the sugarcane farmers, or adoption of beekeeping—which would require households to make a significant commitment of financial resources for a physical asset that may take six months or longer to bring returns and is not easily transportable in the event they have to flee. Conversely, practices that reduced dependence on purchased inputs (e.g., practices that reduced predation by grasshoppers) were adopted because they *reduced* people's vulnerability.

Household assets and adoption/non-adoption

Poor households generally have fewer assets than less poor households. This means that agricultural practices that require a high level of assets to adopt are more likely to exclude the poorest households from direct benefits. Liberians are among the poorest of the poor because of repeated loss. Reardon and Vosti's (Reardon and Vosti 1997) concept of 'conservation investment poverty' highlights poor households' limited capacity to mobilize the necessary resources for even highly profitable and effective agricultural practices. All of the LEISA practices taught during the IPM-FFS require some combination of assets, but those practices that build upon already-existing assets are more likely to be adopted than those that require large investments (e.g., significant knowledge base, labor, financial resources, hand tools (cutlass, axe, hoe, etc.), or group capabilities).

Lessons Learned Regarding Adoption/Non-adoption of Agricultural Practices

Ensuring the adoption of practices involves focusing on the strategies, needs, and limitations of households. Three lessons learned from the case study are listed below followed by a discussion of recommended actions:

1. Potential agricultural practices must be compatible with predominant livelihood strategies and address sources of vulnerability.

Attention should be paid to moveable and transferable skills such as training (developing human capital), as well as the promotion of social capital. Correlated to the issue of ensuring adoption in the face of uncertainty is the design of intervention programs to support people's livelihoods. Introducing new agricultural practices as group or community-based projects has the advantage of reducing the most formidable barriers to household adoption, and building and reinvigorating social capacity within a village.

2. Anything that increases a household's exposure to risk—or their perceptions of exposure to risk—will seem less attractive, even if it could potentially provide dependable and lucrative sources of income.

Households are extremely vulnerable to shocks arising from chronic conflict and political instability; the unstable nature of agro-ecosystems; external and internal trends (e.g., rapid population growth, markets conditions, etc.); and seasonality effects. Respondents placed a high priority on managing and minimizing risk.

Pest-management practices (e.g., multi-cropping, intercropping, trap-and-decoy, and neem) were widely adopted because they addressed people's primary concerns—loss of crops from grasshoppers and other agricultural pests—and did not require “high” levels of assets.

Soil fertility practices (e.g., composting, slash-and-mulch, and farmyard manure) experienced lower levels of adoption. This was related to perceptions of risk (e.g., snakebites), less familiarity, perception of labor demands, unavailability of sufficient quantities manure (meager livestock resources), and incompatibility with cultural practices. The soil fertility practices were fairly unfamiliar to the IPM-FFS participants. As expected, practices that are less familiar will take longer for households to adopt. Secondly, people have a well-founded fear of snakes. Liberia has eleven species of poisonous snakes (TLC (2003). Risk management practices included burning and reducing the leaf litter around houses to eliminate potential snake and termite habitat.

Finally, productive conservation practices (e.g., beekeeping and snails) were the least adopted practices despite being potentially the most lucrative and theoretically ideal for home-based income generation. The material (i.e., wood planks) and financial requirements for construction of the hives proved to be a barrier to adoption on a household basis, but was progressing slowly as a group project. Agencies must be knowledgeable about, and responsive to, the limitations of household assets including, but not limited to financial resources.

3. Agricultural practices will not succeed without a commitment to low input requirements—especially financial requirements—for households to be able to adopt.

To be successful, efforts to initiate sustainable agricultural practices should address smallholders' concerns and be responsive to the economic needs of subsistence-level smallholders. Chronic conflict reduces the amount and availability of assets. Fields and forests are burned (eliminating natural resource and agricultural assets such as seeds); fleeing results in abandonment of physical assets (i.e., tools, livestock, and other items); and the inevitable looting and burning of dwellings essentially results in having nothing to return to.

By and large, households were able to implement the four *pest management practices* because these practices utilized existing knowledge, did *not* require the purchase of inputs, and, in the case of neem, were widely available. In one of the case study villages, IPM-FFS households indicated that neem trees were not present in the village and this proved to be a hindrance to adoption.

Methods for increasing *soil fertility* must similarly required little or no external inputs. Households are unwilling to invest in livestock (sources of farmyard manure) that could inevitably be lost to conflict.

Productive conservation practices require financial and physical inputs that are beyond the reach of most households. Beekeeping and home snail production are lofty goals, but agencies must realize that in the absence of skills, materials, financial resources, and the highly uncertain environment of chronic conflict and political instability, these will take longer for households to adoption their own.

The lack of simple *farm tools* mainly proved to be a hindrance in IPM-FFS attendance rather than an obstacle to adopting particular agricultural practices. The provision of tools during agricultural training programs, such as the IPM-FFS, should be given strong consideration by the donor organization to enable participation, particularly by women (who frequently do not own even a tool as basic as a cutlass).

Final Thoughts and Lessons Learned About Developmental Relief

The milieu of chronic conflict and political instability presents a number of challenges. In the face of direct conflict, the prime challenge is the art of survival. Physical survival strategies implemented by Liberians ranged from flight into the bush, neighboring countries, larger urban areas, and IDP camps to passive accommodation of invading forces. These range of options were employed as the situation at the time warranted. Every one of these strategies carried with it the requirements of physical stamina, financial means, or geographic proximity. Each option provided both a safe haven as well as a hazard at different stages of the conflict. Those seeking protection in larger cities, IPD camps, and refugee camps

in Guinea and Côte d'Ivoire often had the benefit of international humanitarian assistance but also experienced harm from exploitation and public health crises. Those remaining in the villages or hiding in the bush were obliged to fend for themselves, subsisting on bush foods and seed rice stocks.

Generally speaking, there is little that can be done from “within” to stop this type of shock. The main interventions and alterations tend to be at the macro/policy and global, regional, and national institutional level and beyond the scope of this research. However, the Liberian case implies that in the milieu of chronic conflict and political instability, where there is fluctuation in conflict conditions, developmental relief interventions can and should occur.

Lessons Learned in Regard to Developmental Relief

Several lessons were learned during the course of this case study that address agency responses and policy implications in regard to developmental relief in the context of chronic conflict and political instability and/or complex humanitarian emergencies resulting from human or natural causes.

1. The onus on relief and development agencies is to operate with high ethical and moral standards in situations of chronic conflict and political instability.

Conflict zones and unstable settings are dangerous; safety conditions fluctuate constantly. Even local or longtime expatriate staff is at extreme risk. Furthermore, dire situations lead to desperate behaviors. Humanitarian principles, political neutrality, transparency, participation, flexibility and so forth, are standards that should be adopted *regardless* of socio-political context. In conflict zones and politically tenuous environments, however, agencies must apply extra rigor to their actions⁶. For example, funding sources have the potential to leave an agency vulnerable to attack from opposing forces. Retribution may be taken out on expatriates as well as local staff for receiving funds from donors with a particular motivation or political agenda. Agency best management practices should be reviewed to ensure political impartiality. While the participatory approach has been advocated in the development literature for years (Chambers (1983), it is essential at all stages of the programming cycle for reasons of transparency, neutrality, and personal safety.

The notion of participation should also be extended to agency staff. Bonds of trust are established when staff join in with participants on group projects (i.e., contribute their time and labor). Program participants can then see that the staff is serious about helping them. All too many agencies and programs have failed or faced immense setbacks in Liberia because an untrustworthy leader or middleman absconded with the finances and materials.

2. When situations are dire, assessing and supporting livelihoods is crucial. Participatory planning methodologies are essential in performing needs assessments and developing appropriate strategies.

Assessing household and community resources is essential in formulating solutions. Programs must be responsive to people's stated needs and desired outcomes. Relevant issues must be jointly identified and prioritized so that realistic strategies and options can be pursued. Assessment and support can be tailored to the level of interest (e.g., macro—identification of national issues and priorities down to regional, community, or household levels), although, it should be realized that every issue or need cannot be addressed by a given agency. It is important to at least pinpoint and understand the processes that occur above the level of interest (i.e., processes occur at national and regional levels which have direct and indirect impacts on communities and households).

Creativity in problem-solving—forming partnerships with other agencies to address inter-related issues—can be accomplished through an understanding of predominant livelihood and coping strategies. Interventions and programs should recognize and build upon household and community coping strategies for managing a variety of shocks, trends, and/or seasonal shifts creating household vulnerability.

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Agencies must be accommodating about adapting interventions to changes in dynamics, as well as be flexible to fluctuating settings and operating conditions. Iterative needs assessments and continued participation should be integrated into agency policies so that planned activities can meaningfully respond to changing conditions. Donor agencies, local staffs, and key actors within the community must share a consensual vision of action plans and end goals.

Given the magnitude of complex problems in the milieu of chronic conflict and political instability, participatory and gendered planning that accurately represents a diverse cross-section of the community is essential. In settings such as Liberia where half the population is under the age of fifteen (Klein (2003), participation must also include children.

3. Providing ‘developmental relief’ is akin to ecosystem recovery following a perturbation. Relief and development should be conducted in concert.

Natural ecosystems follow predictable response patterns following a disturbance. For example, there are cyclic patterns involving continuous recovery from small-scale disturbances within a mature forest and other recovery patterns when there are large-scale disturbances. Despite predictability about types and frequencies of disturbances and recovery patterns, natural ecosystem regeneration does not follow a linear progression toward a “climax” stage. Furthermore, in large-scale disturbances, regeneration may be initiated through external means.

Similarly, the humanitarian community must be able to recognize patterns of local coping mechanisms employed by households (and communities) to diminish the effects and/or recover from a variety of disturbances (i.e., understand the shocks, trends, and seasonal shifts that cause vulnerability). There is a growing body of literature suggesting that researching the strengths of past and contemporary traditional farming systems will reveal the resilience and its capacity to recover normal function (Eberdt (2003). The subsequent developmental relief programs must be flexible and responsive and promote these resilient aspects.

In the short term—the *relief* component of ‘developmental relief—this means trying to assist households and communities in avoiding the shocks; managing the potential effects; and mitigating the impacts—helping people recover and improving the ability of households to “bounce” back. Using the ecosystem analogy, there are situations when external assistance is needed to “jump start” the regeneration process following a disturbance. When disturbances are severe, frequent, and/or large-scale, recovery cannot be accomplished by households or communities on their own. Assistance such as re-seeding and replanting are necessary to prevent or reduce both human and natural catastrophes (i.e., soil erosion on steep slopes during rainstorms). During, and immediately following “peaks” (i.e., active conflict), immediate relief is crucial to eventual self-sufficiency (e.g., provision of seeds when fields have been burned and households have none stored from the previous season). Thus, despite the criticisms regarding humanitarian aid (e.g., the promotion of the ‘dependency syndrome’), donors and agencies must recognize that *relief* must be an indispensable component of “development” efforts in conflict situations to prevent further tragedy and suffering.

In rural communities, such as Nimba County, Liberia, where agriculture is the predominant livelihood, when the integrated socioeconomic, environmental, and cultural elements of the farming system are damaged through conflict (or other human or natural catastrophes), the ability to maintain seed security may be compromised. Seed security is the access by farmers to adequate good quality seed of locally adapted varieties (Eberdt (2003). Seed availability is of paramount importance in ameliorating or eliminating a prime source of household vulnerability. Consideration should be given to the potential role of local seed systems in the recovery and rehabilitation process, rather than relying on formal agricultural structures.

In exceptional cases, when rural livelihood systems have been severely damaged, agencies should consider distributing seeds and tools immediately and efficiently to enable the benefits of a crop in the first available season. That is, provision of assistance for one or two seasons as a ‘start up’ role (O’Keefe and Kirby (1997). As noted in previous sections, some people chose to remain in the villages or nearby in the bush. These households, and the most marginalized members of a community—female-headed

households—should be given primary consideration in seed distributions. In all cases, it is essential to integrate the unique social and economic composition of the population into participatory targeting of assistance in order to help those who are most in need (Eberdt (2003).

In the short term, another significant point to be made is the provision of developmental relief interventions in *refugee camps*. The conventional wisdom of humanitarian relief professionals is that “training people in a period of transience or displacement is a waste of time” (Schowengerdt, Spiegel and Spielberg (1998). However, in chronic conflict situations, transience or displacement can last indefinitely, perhaps even years. Human and social asset building should start or continue in refugee camps (e.g., IDP camps in Liberia or refugee camps in neighboring countries). This is necessary for several reasons. First is that even though refugees were provided with some (limited) food rations from WFP and other humanitarian agencies, once the situation outside the camps was determined to be normalized, refugees were required to plant their own small gardens within a camp. This was a strategy taken by WFP and other relief agencies in Liberia for a variety of reasons and was thought to encourage agriculture and market commerce in the IDP camps (Schowengerdt, Spiegel and Spielberg (1998).

Limiting food rations or providing people with bulgur wheat rather than their preferred staple diet (e.g., rice in Liberia) has been utilized by relief agencies in other chronic conflict settings Bradbury (1998); Eberdt (2003); Schowengerdt, Spiegel and Spielberg (1998). Fear of creating relief dependency, and "institutionalizing relief" drove agency strategies in northern Sudan, and was used to rationalize a cut in food rations (Bradbury (1998).

Secondly, training programs are useful in initiating the healing process that is critical in conflict zones. The psychological impact of knowing that other people care about them and their dire situation is essential in alleviating some of the trauma. Oftentimes, the local staffs of humanitarian agencies are in the same situation as the very people they are trying to help. They, too, have fled and are situated in a refugee camp. Most of the Ganta Mission Station staff fled to Guinea and tried to provide assistance to fellow Liberian refugees.

The final justification for training in refugee camps lies in its *democratizing power*. The underlying causes of chronic conflict and political instability in Liberia are poverty and lack of resources. It is irrelevant whether or not the purpose of internationally-funded interventions is defined as helping people to help themselves (development) or preventing loss. Equipping vulnerable households with better coping skills and strategies while they are in refugee camps enables them to survive the miserable conditions which have been imposed on them, and supports them toward recovery when they are able to return to their homes or resettle elsewhere.

Numerous lulls in the Liberian conflict have afforded opportunities to strengthen human and social assets, which in turn, provides tremendous psychological support for traumatized people. The IPM-FFS took place during such a lull. In the medium term—during prolonged periods of stability—this means:

- Improving the sustainability of household and community-level assets;
- Reducing vulnerability to the inevitable natural resource, financial, human, and social shocks.
- Developing greater diversity in livelihood strategies available to households (e.g., new products, small enterprise development, etc.) in concert with on-going human and social capacity building.
- Improving the productivity of the land through LEISA and other sustainable practices that enable agricultural intensity and promote ecological design principles.
- Assisting smallholders in planting low-input, fast-growing food crops.

4. Programs must improve people’s ability to recover, especially in the longer term.

The aim of developmental relief is to assist households and communities to attain sustainable livelihoods. The expectation is that community participation and local capacity building will ensure sustainability. Interventions that focus on strengthening social and economic variables in the long term

contribute to household [community level] sustainability and self-sufficiency through all but the most severe perturbations.

The most transportable asset in a chronic conflict setting is human capital, especially people's knowledge and skills. People in Liberia have *less* capacity to sustain development at present than they had before the conflict began. As a consequence, in light of the extreme shortage of physical and financial assets, and labor to a lesser extent, community-based organizations (CBOs) are an invaluable resource in developing resiliency. One way that a CBO can enhance local resiliency is by creating *communal seed banks* that can be accessed by villagers in times of need. Benefits to this approach are that seed banks can function with limited external assistance and serve as both preventative and post-disaster recovery measures (Eberdt (2003). CBOs also provide a safe haven for experimentation with agricultural practices that require assets beyond those found in most smallholder households.

Secondly, agencies must provide social support to ensure adoption and continuance of agricultural practices. Follow-up visits and mutually agreeable level of technical assistance, are essential for promoting adoption among slow adopters. Most respondents indicated that they did not necessarily have technical questions or problems; they merely wanted *encouragement*. Encouragement, through periodic on-farm visits, can also alleviate the "dependency syndrome". An extension agent, non-governmental organization, or CBO leader, for example, who conducts regular follow-up visits can better evaluate the seriousness of participants (i.e., motivation) and identify areas where additional training is needed.

The kinds of knowledge and skills that are particularly salient to Liberia are:

- Observation skills to compensate for lack of resources;
- Organizational/leadership (harnessing social and other capital);
- Alternative production techniques (especially sustainable small-scale agriculture), and alternative products, particularly home-based products;
- Health, nutrition, and literacy (based on the priority level, and on the support resources available at the time).

5. Rather than conduct *ex ante* research on potential dissemination options, it is wiser to use all means possible in the milieu of chronic conflict and political instability.

There is no single best method for disseminating information to build human and social capacity. There were three main routes along which information was disseminated: (1) IPM-FFS participants informally shared their new knowledge with other household members, extended family, neighbors and friends; (2) IPM-FFS leaders became 'model farmers' and used their farms to demonstrate the agricultural practices, and became active in community-based agricultural organizations as farmer-teachers; (3) IPM-FFS groups stayed together after the training was completed and became a formal organization (i.e., a community-based organization with charter, bylaws, and officers). Thus, diversity in information conveyance is indispensable to reach different types of individuals and households.

6. Despite the view that chronic conflict and political instability produces a culture of dependency, solutions must be developed without driving households to unsustainable coping strategies.

A key premise of many government and NGO/INGO programs is that international emergency relief produces a 'relief mentality' and a 'dependency syndrome' and is an obstacle to sustainable development (Bradbury (1998). Admittedly, agencies *do* have difficulty accomplishing their aims when the primary motivation for people's participation is the "benefits" they anticipate receiving are tools, seeds, and/or cash rather than newfound skills and knowledge. All too often, program participants do not perceive training in a particular set of skills or knowledge as a benefit. One solution to reduce the "dependency syndrome" is to provide tools during the training sessions and collect them at the end of the session. The tools could be given to participants upon completion of the entire training. Another approach is to provide incentives and additional opportunities such as the potential for leadership training.

7. The key to the design of ‘developmental relief’ programs lies in recognizing opportunities for outreach.

In the milieu of chronic conflict and political instability, such as the Liberian case, there is a continuous flux of “peaks” and “valleys” in conflict intensity. Both relief and development are needed, and they are not mutually exclusive. A linear model is not possible. Agencies must *adapt* their programs to the milieu of chronic conflict and political instability to become more flexible (i.e., develop multiple pathways), small-scale, match practices and programs to people’s livelihoods and stated needs, and minimize the use of scarce assets. For example, due to the lack of formal credit institutions, many of the respondents were interested in schemes in which liquidity is provided up front by an external intermediary. People are accustomed to paying a token to the landowner at harvest. A donor agency would absorb the risk of not recovering the investment should the harvest fail or active conflict ensue. Addressing households’ lack of financial assets through the provision of credit may enable them to reduce unsustainable activities (e.g., charcoal production); adopt a longer-term perspective (during periods of relative stability); and motivate them to invest in sustainable activities. The credit program could also serve as a means for building local capacity for leadership and business management skills.

In closing, there is a need to consider both the direct and indirect effects of an intervention program, such as the IPM-FFS in Liberia, to build on successes and learn from program limitations or setbacks. The participatory approach—the notion that agency “experts” have much to learn from participants, including women and children has been widely accepted and implemented to varying degrees over the past three decades. Program analysis should include participatory methods that capture both qualitative and quantitative information about the program and why people choose to adopt or not adopt a given practice. The qualitative approach is essential in elucidating people’s actions and feelings, while quantitative approaches measure the rates of change (e.g., increases or decreases in yield, soil fertility, pest reduction, household income changes, etc.). Together, this information helps provide feedback so that programs expand, evolve, and form into new and different areas of outreach.

References Cited

- Adevu, M. (2002) West Africa Coordinator, Sustainable Agriculture and Rural Development Initiative, GBGM-United Methodist Church. In. Ganta, Liberia
- Atkinson, P. (1997) The war economy in Liberia: a political analysis. London: ODI.
- Bartlett, A. (2000) IPM as an entry point for Sustainable Livelihoods. The Field Alliance, Community Integrated Pest Management. <http://www.communityipm.org/Concepts/sustlive01.htm>.
- Bartlett, A.P. (1998) Rome: United Nations Food and Agriculture Organization.
- Berkeley, B. (1992) Liberia: between repression and slaughter. The Atlantic Monthly. <http://www.theatlantic.com/issues/92dec/berkeley.htm>.
- Bishop, J. (2002) Coordinator, Ganta United Methodist Poultry Program. In. Ganta, Liberia
- Bonkuo, B. S. (2003) Field Supervisor, Ganta United Methodist Agriculture Program. In. Ganta, Liberia
- Bradbury, M. (1998) Normalising the crisis in Africa. The Journal of Humanitarian Assistance. February, 1-16.
- Brown, J.C. (1999) Beekeeping in the Amazon: Rural Development, Conservation, and Participation in Rondonia, Brazil. In Geography. Los Angeles, CA: University of California
- Chambers, R. (1983) Rural development: Putting the last first. Harlow, UK: Longman Scientific and Technical.
- Chambers, R. and G. Conway (1992) Sustainable Livelihoods: Practical concepts for the 21st century. Brighton: IDS.
- Daieh, J. (2003) World's Second Poorest Country. In The News. Monrovia, Liberia
- Dreyer, M. (1984) Neem. Fort Meyers, FL: Educational Concerns for Hunger (ECHO). <http://echonet.org/tropicalag/technotes/Neem.pdf>.
- Eberdt, C. (2003) Questioning seeds and tools: emerging strategies in post-disaster seed relief and rehabilitation. The Journal of Humanitarian Assistance. February, 1-16.
- FAO (2002) FAO's Emergency Activities Technical Handbook Series-- the emergency sequence: what FAO does and how FAO does it. Food and Agriculture Organization of the United Nations. <http://www.fao.org/DOCREP/003/X6868E/X6868E00.htm>.
- Garnett, T. and C. Utas (2000) The Upper Guinea Heritage: Nature Conservation in Liberia and Sierra Leone. Amsterdam: The Netherlands Committee for IUCN
- Goodhand, J. (2003) Enduring disorder and persistent poverty: a review of the linkages between war and chronic poverty. World Development. 31, 3, 629-46.
- Hall, A. (1997) Sustaining Amazonia: Grassroots Action for Productive Conservation. Manchester, UK: Manchester University Press
- Hendrickson, D. (1998) Humanitarian action in protracted crises: the new relief 'agenda' and its limits. London: Overseas Development Institute. <http://www.odihpn.org/documents/networkpaper025.pdf>.
- HRW (1990) Washington, D.C.: Human Rights Watch.
- ICRC (1996) Annex V: Key factors for developmental relief. International Review of the Red Cross. 310, 55-130.
- Kenmore, P. (2002) A perspective on IPM. ILEIA Newsletter. 13, 4, 8.
- King, F. (2002) Project Coordinator, Environmental Foundation for Liberia. In
- Klein, J.P. (2003) Briefing to the Security Council by Jacques Paul Klein, Special Representative of the Secretary-General for Liberia-New York on September 16, 2003. United Nations Department of Public Information. <http://www.reliefweb.int/w/rwb.nsf/0/62c5af448881594649256da400198de0?OpenDocument>.
- Kleinman, P.J.A., D Pimentel and R.B. Bryant (1995) The ecological sustainability of slash-and-burn agriculture. Agriculture, Ecosystems and Environment. 52, 235-49.
- Kolb, D. (1984) Experiential Learning. Englewood Cliffs, NJ: Prentice Hall

- Kromah, F. (2001) Wetlands in Liberia. Accra, Ghana: The Center for African Wetlands.
- Lyle, J.T. (1994) Regenerative Design for Sustainable Development. NY: John Wiley and Sons, Inc.
- O'Keefe, P. and J. Kirby (1997) Relief and rehabilitation in complex emergencies. *Review of African Political Economy*. 25, 74, 567-82.
- Ooi, P.A. (1998) Beyond the farmer field school: IPM and empowerment in Indonesia. London: IIED.
<http://www.iied.org/agri/gatekeepers/gk78.html>.
- Oxfam (2002) Emergency Response Manual. Oxford, UK: Oxfam Great Britain
- Pontius, J., R. Dilts, A. Bartlett (ed.) (2000) Ten Years of Building Community: From Farmer Field Schools to Community IPM. Jakarta: FAO Community IPM Programme
- Reardon, T. and S.A. Vosti (1997) Poverty-Environment Links in Rural Areas of Developing Countries. In S. A. Vosti and T. Reardon (eds.), *Sustainability, Growth and Poverty Alleviation: a policy and agroecological perspective*. Baltimore, MD: Johns Hopkins University Press
- Reijntjes, C., H. Bertus and A. Waters-Bayer (1992) Farming for the future: an introduction to low-external-input and sustainable agriculture. London: Macmillan
- Sanoff, H. (2000) Community participation methods in design and planning. NY: John Wiley and Sons, Inc.
- Schafer, J. (2002) Supporting livelihoods in situations of chronic conflict and political instability: overview of conceptual issues. London: Overseas Development Institute.
http://www.odi.org.uk/publications/working_papers/wp183.pdf.
- Schowengerdt, A., P. Spiegel and F. Spielberg (1998) New Orleans, LA: Complex Emergency Response and Transition Initiative (CERTI).
http://www.certi.org/publications/case_study/Liberiaframe.htm.
- Sirleaf, A.M. (1998) The Role of the Economic Community of West African States (ECOWAS) in the Liberian Civil Conflict, 1980-1997: A Case Study of Conflict Management. In. Washington, D.C.: Howard University
- TLC (2003) Venomous Snakes of Liberia and West Africa. The Liberian Connection.
http://www.liberian-connection.com/tlc_snakes.htm.
- UNDP (2003) Human Development Index. United Nations Development Programme.
http://www.undp.org/hdr2003/indicator/cty_f_LBR.html.
- USAID (2002) Liberia. US Agency for International Development.
http://www.usaid.gov/regions/afr/country_info/liberia.html.
- USDOS (2003) Background Note: Liberia. US Department of State, Bureau of African Affairs.
<http://www.state.gov/r/pa/ei/bgn/6618.htm>.
- van der Ryn, S. and S. Cowan (1996) Ecological Design. Washington, D.C.: Island Press
- Waines, D. and A. Waines (2003) Founders of Equip and Hope for the Nations. In. Ganta, Liberia
- White, P. and L. Cliffe (2000) Matching response to context in complex political emergencies: 'relief', 'development', 'peace-building' or something in-between? *Disasters*. 24, 4, 314-42.
- Wonyenneh, J. and W. Kokeh (2003) Agriculture Extension Agents, Hope for the Nations. In