

1 Agricultural Extension in Post-Conflict Liberia: Progress Made and Lessons Learned

Austen Moore*

University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Background to the Conflict

Conflict and agriculture have been intertwined in the Republic of Liberia since the country's formation by repatriated slaves from the USA and subsequent independence in 1847 (Pham, 2004; CIA, n.d.). Early in its history, Liberians of American descent dominated the political process and began to annex lands that traditionally belonged to indigenous groups (Humphreys and Richards, 2005; MoA, 2007). The Americo-Liberian minority eventually controlled many of the nation's most productive agricultural lands and natural resources (Unruh, 2009).

Many Americo-Liberian landowners practiced a plantation-style agricultural model, while most indigenous farmers either served as labor on large-scale plantations or practiced small-scale farming. The plantation model led to relative productivity in staple and cash crops into the late 1970s (MoA, 2007). Liberia became a net exporter of sugar cane, cocoa, palm oil and rubber.

This period also represented the peak of agricultural extension in Liberia. During the late 1970s, the World Bank heavily funded training-and-visit extension to spread Green Revolution technologies in Africa (Swanson

and Rajalahti, 2010). Liberia received World Bank funding to expand its extension workforce and place officers in every county, district and *klan* (township), dramatically increasing the number of farmers reached by extension information (MoA, 2007). Funding was also used to enhance domestic agricultural research through the Central Agricultural Research Institute (CARI) in Bong County and Cuttington University, Liberia's leading agricultural institution (FARA, n.d.).

However, benefits were not felt by all Liberians. Highly productive plantations and lucrative export agreements allowed the Americo-Liberian minority group to accumulate further wealth and prosperity (Sawyer, 2005), while indigenous Liberians became disproportionately poor (Pham, 2004; Humphreys and Richards, 2005; GRC, 2007). Notably, the Liberian government authorized the lease of 100,000 acres of prime agricultural land to the US-owned Firestone Company in 1926, an arrangement that was subsequently criticized for benefitting 'elite' Americo-Liberians while displacing indigenous farmers (Saha, 1988).

Similarly, extension services did not reach all Liberians equally. The Green Revolution model and corresponding technology

* Corresponding author e-mail: acmoore@illinois.edu

transfer approach encouraged large-scale agriculture, and services were often directed towards plantation-style farming systems (Saha, 1988; Pham, 2004). Indigenous farmers' role as laborers or practitioners of small-scale subsistence agriculture meant that extension services were seldom tailored to their needs (MoA, 2007). This disparity contributed to mounting tensions, especially in rural areas where food security was lowest.

Political, economic and ethnic tensions ultimately led to full-scale conflict in 1980, when indigenous military leaders led a coup that toppled the Liberian government. The following 25-year period saw ongoing internal conflict, widespread human rights violations and devastating destruction (Humphreys and Richards, 2005; CIA, n.d.). Peace was re-established in 2003 under a transitional government, followed by elections in 2005 (MoA, 2007; World Bank, 2013).

The Liberian civil war devastated the country, erased years of development (UNDP, 2005) and crippled the Liberian economy (Humphreys and Richards, 2005). Post-conflict Liberia had few options to promote development, economic growth and poverty reduction or to address other effects of the war (Blattman and Annan, 2012).

Liberia's recent Ebola epidemic further complicated post-conflict challenges. A total of 10,666 cases and 4806 deaths were recorded during the outbreak, which occurred from 20 March 2014 to 9 May 2015 (WHO, 2015). The epidemic had considerable implications for Liberia's development, agricultural productivity and economic growth. In fact, Ebola is expected to cause development indicators (e.g. Human Development Index, poverty, life expectancy) to decline for the first time since 2005 (UNDP, 2015).

Post-Conflict Agricultural Context

As other post-conflict economic sectors struggled to rebuild, many Liberians reverted to small-scale agricultural production. In a 2007 report, the Ministry of Agriculture (MoA) described food crop production as Liberia's 'most important source of livelihood' (p. 13)

and reported that agriculture was the main income-generating activity of 74% of Liberians. In 2013, the agricultural sector still made up 76.9% of the national gross domestic product (GDP) (CIA, n.d.).

Liberia also has significant potential for agricultural growth. The country contains huge amounts of arable lands and fertile swamps due to topsoil accumulation (FAO, n.d. b). Liberia receives 240 cm (94 inches) of precipitation annually (FAO, n.d. a), an extremely high amount relative to other West African countries. Improved water management and usage of arable land could increase production, food security and livelihoods for Liberian farmers (MoA, 2007).

Despite its importance and potential, the agricultural sector was also devastated by the Liberian civil war. Overall production levels of rice, cassava and maize were much lower than before the war (FAO, n.d., c), and food security dropped to crisis levels for many Liberians. During the early post-conflict period, food aid was provided to address emergency shortages, but little was done to improve domestic production. By 2007, food insecurity still affected 80% of rural households (MoA, 2007), with people displaced by conflict up to 20% more food insecure (Ghimire *et al.*, 2013). Female-headed households, the number of which increased due to conflict, also showed lower productivity per hectare and correspondingly lower food security and income levels (Ghimire *et al.*, 2013).

Staple crop production declined for several reasons. Large landholdings and plantation systems were targeted during the conflict as symbols of oppression and marginalization (Unruh, 2009). Plantations were often abandoned as owners and laborers were displaced, and post-war land-rights issues made restarting plantation agriculture problematic.

Efforts to restart large-scale production have centered on farmers' groups and producers' organizations. However, virtually all existing farmers' groups dissolved as farmers were displaced during the conflict, and a slow and difficult reintegration and reconciliation process made their revival and rehabilitation during the early post-conflict period difficult (Fearon *et al.*, 2009). Farmers' groups

are more viable today, but are still affected by community dynamics and post-conflict tensions.

The conflict also changed the characteristics of rural labor. Rebel movements primarily originated in rural areas and also in the three counties (Bong, Lofa and Nimba) considered the nation's breadbasket (Humphreys and Richards, 2005; Stack and Brabazon, 2008). Since these were the epicenter of fighting, rural peoples in this region were displaced and fled towards neighboring Guinea or the coastal capital of Monrovia. Nearly half (45.5%) of Liberians displaced from these areas fled to Guinea, where many resettled or remain in refugee camps (Ghimire *et al.*, 2013). As a result, many rural areas were underpopulated when the fighting ceased.

Prior to the war, young men had comprised much of the agricultural workforce. However, many rural youth were displaced or mobilized into armed groups (Stack and Brabazon, 2008). Post-conflict youth are largely uninterested in agriculture, preferring economic activities in other sectors or in urban areas, and often lack the requisite skills to succeed in the sector, even if they do express a desire to join the workforce (Blattman and Annan, 2012).

As a result, the overall demographics of the rural agricultural workforce changed. The majority of farmers in post-conflict Liberia are older than 50 (USAID, 2008b), and most are women (MoA, 2008b). These groups are less suited to labor activities common to plantation systems (MoA, 2007). Furthermore, female-headed households are generally poorer (MoA, 2007) and less able to employ workers (Moore, 2014). Because the workforce made reinstating plantation-style agriculture untenable, the majority of post-conflict agricultural production is small scale and largely for subsistence purposes (Ghimire *et al.*, 2013).

Agricultural production was also compromised by the widespread destruction of agricultural and non-agricultural infrastructure. Fighting damaged bridges and roads needed to bring agricultural products to markets, as well as limiting penetration of wholesale buyers and increasing the transport costs of seeds and inputs during the post-conflict

period. Even in 2012, 94% of roads in Liberia remained unpaved, and many become impassable during the rainy season (Shor, 2012). Currently a major road project is underway connecting Liberia's 'breadbasket' counties to the capital (Moore, 2014). However, in the meantime farmers struggle to take produce to market, which reduces their returns and acts as a disincentive to large-scale production.

Other infrastructure was also affected. Irrigation infrastructure was widely destroyed, especially in swamp-based rice systems in the rural north. In 2013, only 5% of farmers had access to irrigation infrastructure (Ghimire *et al.*, 2013). Government buildings, including those of CARI and other agricultural extension facilities, were looted and burned. Liberia's main energy source, the Mount Coffee hydroelectric plant in Montserrado County, was damaged in the conflict and is still being rebuilt (IFC, 2013), which limits processing and storage capacities and accelerates post-harvest loss.

Agricultural tools and inputs were stolen, lost or destroyed during the war, as people fled rural areas. Farmers operating after the war lacked even the most basic tools to prepare fields, weed and harvest. They also lacked the seeds, rootstock and plant material needed to quickly resume production. Donor agencies distributed agricultural inputs and equipment to farmers in the early post-conflict period, but these conditions slowed the redevelopment of the agricultural sector (Ghimire *et al.*, 2013).

Significance of Agriculture and Agricultural Extension

Despite the challenges, agricultural development is fundamental to reconstruction, peace and stability, and to overall development in post-conflict Liberia. The transitional government identified the importance of rebuilding agriculture in early policy documents. Liberia signed the 2003 Comprehensive Africa Agriculture Development Programme (CAADP) agreement, which committed the country to allotting 10% or more of the national budget to agriculture

(MoA, 2007; IFPRI, 2013). These early policies were subsequently reinforced by President Johnson-Sirleaf following her 2005 election victory. The new administration placed agriculture ‘at the center of reconstruction and development efforts’ (MoA, 2007: 1) and identified rice as a commodity as important to national development as oil and concrete (Shor, 2012). Liberia’s Poverty Reduction Strategy also cited agriculture as crucial for economic revitalization (Zinnah and Perry, 2011). Furthermore, agriculture was viewed as the sector most able to reincorporate displaced people and former fighters, contributing towards long-term peace and stability (Blattman and Annan, 2012).

Specific strategies represent the two phases of post-conflict development. Early agricultural policies created and implemented during the emergency (or relief) phase focused mainly on food security. In addition to food aid, programs to rebuild large-scale production systems, use modern technologies and develop value chains and markets for Liberian produce dominated this period (MoA, 2007). While the Government of Liberia lacked the capacity to adequately implement this strategy, international donors contributed funding and programming towards production agriculture (USAID, 2008a). Many international agencies distributed seeds, tools and other inputs designed to help farmers restart food and cash crop production. Rice production was prioritized through several large-scale irrigation and swamp development schemes. Increasing production of Liberia’s second staple, cassava, has also become a deliberate focus of the Government of Liberia and international donors (MoA, 2007; MoA, 2009; DAI, 2012; Moore, 2014).

Agriculture in the development (or rehabilitation) phase expanded to better align with changing conditions. Stakeholders sought to transform the sector to foster both large- and small-scale production models (MoA, 2008b). Policies began to include ‘pro-poor’ strategies designed to enhance the production capacity and yields of smallholder farmers, thereby improving rural livelihoods and increasing incomes (MoA, 2007; MoA, 2008a, 2009). This livelihood-centric focus was intended to address poverty, build local

food security and promote stability in rural areas (MoA, 2007; MoA, 2008a; MoA, 2009). The Ebola epidemic led to a downturn in agricultural yields and an increase in food insecurity, leading to increased efforts that reinforced the focus on agricultural development (World Bank, 2015b).

Post-Conflict Agricultural Extension

Swanson *et al.* (1997) described food security and rural livelihood development as the two primary objectives of agricultural extension. Similarly, during the post-conflict period, Liberia prioritized both objectives and relied heavily on agricultural extension to reach its development objectives (MoA, 2007).

Whereas pre-war extension services were provided largely by the MoA (Moore, 2014), in the current post-war phase the system is composed of a range of actors. At the center is the MoA’s Department of Rural Development, Extension, and Research (DRDER). A total of 134 extensionists work in the DRDER (Moore, 2014), including 72 field-based extension officers serving Liberia’s 15 counties (McNamara *et al.*, 2011). Each county contains County Agricultural Coordinators (CACs) and District Agricultural Extension Officers (DAOs), supported by regional subject matter specialists responsible for multiple counties (MoA, 2007; USAID, 2008a; USAID, 2009).

The demographics of public extension personnel were substantially impacted by the conflict. The majority of extension administrators, but also most field-level officers, are over 50 years old. Many had served since before the conflict and are expected to retire in the next few years (USAID, 2008b; McNamara *et al.*, 2011). During the conflict itself, younger extension officers fled, due to security concerns and the inability to draw a salary as services were suspended (MoA, 2007). As a result of this ‘brain drain’ there was a need to restock the extension system after peace was re-established (Eicher, 2006). However, the MoA struggles to attract and retain young extension officers, despite wide agreement on the need to employ younger staff (Moore, 2014).

In addition, 89.3% of MoA extension personnel are male (Moore, 2014). Representatives from the Farmers Union Network of Liberia (FUNL) described this imbalance as a major impediment to serving female farmers and an indication of cultural bias and inadequate political will rather than a lack of qualified candidates (Moore, 2014). The MoA is currently undertaking actions to narrow the gender gap (Zinnah and Perry, 2011).

While the MoA occupies a central role, a large number of donors, international non-governmental organizations (INGOs), local civil society organizations (or domestic NGOs) and a small contingent of private sector actors also provide extension services to farmers. Liberia experienced a sizeable influx of donor-funded projects immediately following the 2003 peace agreement, when the institutional and operational capacity of its government to provide essential services to farmers was at its lowest (USAID, 2008a). This phenomenon is common in post-conflict or post-disaster situations, where injections of donor funding are often needed to provide services in a vacuum of public capacity (Schuller, 2012). Many of these efforts included short-term food aid, but also the dissemination of inputs and basic extension services to rapidly restart agricultural production.

As Liberia moved from the emergency phase into the development phase, many organizations ceased operations and were replaced by others with different mandates. Still others (e.g. the Adventist Development and Relief Agency) have shifted from providing aid to conducting more traditional extension activities (Moore, 2014). Approximately 60 donors and NGOs (both international and domestic) were operating in agricultural extension in 2011 (McNamara *et al.*, 2011). Among these are ACDI/VOCA, BRAC, Care International, the Food and Agriculture Organization of the United Nations (FAO) and Winrock International.

Domestic NGOs and civil society organizations have also proliferated in the early development phase, and especially since 2010. During the conflict and early post-conflict period, church-based organizations were the predominant actors within civil society. More

recently, organizations such as the Community of Hope Agriculture Project (CHAP), the FUNL and the Sustainable Food and Seeds Project have emerged to address specific needs of the post-conflict period; serve unique segments of the population, regions and crops; and increasingly work in partnership with the MoA, donors and INGOs as they grow in number, capacity and relevance (Moore, 2014). Meanwhile, the private sector remains minimally involved in extension service delivery.

Donor- and NGO-employed extension officers are typically much younger and more likely to be female than their MoA counterparts. These organizations have been proactive about hiring and developing recent agriculture graduates of the University of Liberia and Cuttington University (Feed the Future, 2011). Donor projects in particular attract younger and more educated workers due to higher salaries and better working conditions (Swanson and Rajalahti, 2010). Often personnel are recruited away from the MoA or other agricultural employers because the supply of trained extensionists is low, having been diluted by conflict and the 'brain drain' (Eicher, 2006). Donors and NGOs have proven far more likely to employ female extensionists, although even these organizations have rarely exceeded a rate of 40% women (DAI, 2012; Moore, 2014).

Experiences, Impacts and Issues

Extension in post-conflict Liberia is complicated and faces considerable challenges in serving farmers. A range of contextual factors, strategies and approaches have been used—with varying levels of success—in the post-conflict period. The following sections assess some key issues affecting the extension system.

Policy and planning

Post-conflict Liberia has undergone several major extension policy shifts between the emergency and development phases. Initially

Liberia, like many post-conflict countries, did not have much formal agricultural policy in place. In the first few years following the conflict, the MoA largely promoted extension policies to rebuild food security through speeches, press releases and other informal channels. Liberia later signed the CAADP agreement, and President Johnson-Sirleaf emphasized agricultural production in her inaugural policies (MoA, 2007). This approach did not always provide a consistent message or strategy for agricultural development. Without established policy, donors and INGOs implemented their own operational policies and many actors used disconnected or contradicting development approaches in the early post-conflict period.

However, from 2007 to 2009 the MoA created several key policies intended to clarify development priorities and shift the extension system towards longer-term development efforts. These policies discussed a pluralistic, participatory, value chain approach designed to be more appropriate to changing conditions than the largely top-down, technology transfer model used in the pre-war period (MoA, 2007; MoA, 2008a; MoA, 2009). Policies also included an emphasis on livelihood development and farmer empowerment strategies.

This policy transition is significant for several reasons. It represents a semi-resolution of an ongoing revitalization versus modernization debate between extension providers. The majority of MoA administrators and CACs were trained during the training-and-visit era when Liberia's agricultural sector was stronger. In several interviews, senior administrators cited nostalgia for Liberia's pre-war agriculture and suggested that returning the nation to that model of extension should be the MoA's goal (Moore, 2014). This mindset was common among the 'old guard' within the MoA.

In contrast, younger members of the MoA were eager to modernize the extension system, with support from donors, the INGO sector and other domestic partners. The need to adapt to post-war conditions has slowly gained traction, despite ongoing resistance from senior officials. The Modernizing Extension and Advisory Services (MEAS) project

was invited to conduct a scoping mission as a step towards this objective (MEAS, 2011). These transitions have slowly occurred, although considerable support from within the Liberian government and from outside stakeholders is required (MoA, 2007; MoA, 2008a; MoA, 2009; McNamara *et al.*, 2011).

However, implementation of transitions in extension policy has proven slow to match the rhetoric. One such policy transition is decentralization (USAID, 2009). While decentralization of extension services to the county level was an objective of the 2008 and 2009 policies, administrative procedures remain highly centralized and bureaucratic years later (Moore, 2014). Activities such as identifying program foci and priority-setting responsibilities are largely undertaken at the MoA office in Monrovia. Requests for materials, and especially funding, are also relayed by officers through their CACs to the national level, where funding and supplies are managed and dispersed (Moore, 2014). Donor projects and INGOs are more decentralized. Many large programs—such as ACDI/VOCA's LIFE III program and Development Alternatives International (DAI)'s Food and Enterprise Development (FED) program—have county-level offices with relative autonomy (MEAS, 2011; DAI, 2012). BRAC has community-level programs that operate independently, depending on the needs of its respective sites (BRAC, n.d.).

The MoA's struggles to decentralize are likely to be a legacy of the Liberian conflict. Mutual distrust between the central government and local authorities is certainly a factor. Whereas donor agencies and multinational partners (e.g. USAID, World Bank) stress localization and a decentralized democratic process as a means of promoting good governance, the post-conflict Liberian government may not be willing to expand the rights and power of peoples or regions that previously fought against the prior regime, destroyed government property and targeted public servants. This mindset, however obscure, is likely to contribute to slow decentralization shifts in Liberia.

Another area of policy discord relates to participatory, capacity-building extension that promotes farmers' empowerment. The

heavy influx of donor dollars and programs providing free seeds, tools and inputs to farmers in the emergency phase is thought to have created a 'dependency syndrome' among Liberian farmers that compromises current capacity-building programming (Chronic Poverty Research Center, 2011). Farmers have avoided programs that do not include material or financial compensation for participating and are reluctant to engage in training that might produce longer-term capacity building and more sustainable development (Moore, 2014). Changing this mentality has been a challenge to organizations implementing participatory extension models and requires a unified effort among service providers. This shift is particularly complicated by a 'victim mentality' or sense of powerlessness to control one's own well-being, which developed among many Liberians as a result of conflict (Bar-Tal *et al.*, 2009).

In addition, while the MoA and many donors/INGOs have committed to capacity-building strategies, a number of other organizations still actively distribute free inputs to farmers. These programs undercut long-term capacity building and sustainable development of the sector. Progress was being made after several years of post-conflict development and better coordination between extension actors (Moore, 2014), but emergency aid stemming from the Ebola epidemic has reversed this trend (World Bank, 2015b).

Extension policies lack formal review processes to allow for revision and updating as circumstances change (Moore, 2014). The MoA struggles to evaluate the impact of its policies and programs, as do many domestic NGOs (McNamara *et al.*, 2011). Larger donor projects and INGOs have effective monitoring and evaluation processes to guide their operations and strategic planning (DAI, 2012), but no mechanism exists for these evaluations to affect overarching policy at the national level. As a result, the extension system lacks timely revisions to extension policies.

Evidence suggests that poor policy review within public extension is directly tied to post-conflict socio-political dynamics (Moore, 2014). First, much like the policies themselves, revision procedures must be

developed anew and policy review must be conducted by individuals with the requisite capacity or experience. Furthermore, policy review, and especially review practices that include feedback from diverse stakeholders, may also be viewed as a threat to stability. Inviting opposing parties (often headed by former warlords), leaders of different ethnic groups, rural farmers or other influential stakeholders to critique policy of the ruling government could be more contentious than beneficial in post-conflict Liberia. Given these conditions, reticence to actively pursue policy review is not unexpected.

Funding

Funding is a central issue affecting the quality and effectiveness of extension. The overall budget of Liberia in the post-conflict period is compromised by an economy that is in the rebuilding phase coupled with a poor tax base, while threats of instability deter foreign investment and poor institutional capacity and governance concerns limit donors' willingness to provide direct lending (MoF, 2013). As a result, the Liberian government faces considerable challenges related to funding its public advisory services. Despite committing 10% of the national budget to agriculture through the CAADP agreement, evidence suggests that the actual allocation for agriculture is approximately 3%, or US\$14 million dollars (IFPRI, 2013; MoF, 2013). An even smaller amount is dedicated to agricultural extension, with rural infrastructure development (e.g. roads, irrigation systems) accounting for much of agricultural spending (Moore, 2014).

As a result, shortfalls in public agricultural funding restrict services to farmers. The MoA is unable to hire sufficient officers to provide adequate coverage and to rebalance the gender and age of its officers. Retention of talented personnel is also a challenge due to low salaries and high job-related expenses. McNamara *et al.* (2011) reported that nine of 81 officers left the MoA between 2008 and 2011, because of issues related to salary. Moore (2014) also cited multiple complaints

from MoA officers about low salaries and the desire to leave for more lucrative opportunities elsewhere. Officers often seek other income-generating opportunities to supplement their salaries, yet these are few in post-conflict Liberia compared with other countries with greater stability and a stronger private sector (Moore, 2014). Those officers who remain with the MoA lack resources to conduct training and have insufficient fuel allocations for travel to engage with farmers (McNamara *et al.*, 2011).

Insufficient funding also impacts the MoA's technical capacity. The ability to reconstruct CARI, and thereby to conduct research domestically, is compromised (USAID, 2008a), and lack of computers and other technologies limits officers' access to web-based information (Swanson, 2011). As a result, many officers struggle to provide up-to-date information to their farmers. Also, funding limits the capacity to produce print materials or to effectively incorporate information and communication technologies (ICTs) into extension service delivery, despite the potential of these channels to address poor coverage and inform a wider audience (McNamara *et al.*, 2011; Zinnah and Perry, 2011; Asenso-Okyere and Mekonnen, 2012).

In contrast, sizeable investments were made by donor agencies to provide extension services in the post-conflict period. Donor-led initiatives proliferated in Liberia, as in many post-conflict and post-disaster countries, due to the vacuum in public services as the government rebuilt and the dire need for basic agricultural programming. A similar influx of donor funding and donor-led programming has followed the recent Ebola epidemic (World Bank, 2015b).

Several large donor projects and INGOs now operate in the country, with a combined annual budget of more than US\$100 million (Moore, 2014). USAID's funding to Liberia has been reported as the highest total within Africa, despite the country's small size and population (DAI, 2012). The largest single initiative is the FED project managed by DAI. This project represented the Obama administration's Feed the Future initiative for global hunger and food security (Ho and

Hanrahan, 2011) and focuses on providing extension services and developing rice, cassava, vegetable and livestock value chains (DAI, 2012). The budget of FED alone (US\$76 million over 5 years) exceeded that of the Liberian government (Moore, 2014). Other donor agencies and organizations, such as ACDI/VOCA, FAO, Winrock International and the World Bank, have also operated highly funded projects to develop staple and cash crop production (World Bank, 2015a).

These funding levels allow donor projects and INGOs to hire and retain the most highly skilled extensionists available, and even to attract those displaced by conflict back to Liberia. These organizations can also provide pre- and in-service training to their workers, supply and maintain vehicles to allow operations in remote rural areas, and produce print and ICT-based training materials. All of these factors provide a significant advantage that is reflected in the quality of extension services and the corresponding preference by farmers for working with donor-led projects and INGOs, as opposed to with the Liberian government (Moore, 2014). Funding is therefore the single largest factor influencing extension service delivery in post-conflict Liberia.

Pluralism and coordination

As discussed, the early post-conflict period saw a range of extension providers acting without coordinated policy and strategic plans. More recent policies have promoted pluralism, and the MoA has sought to foster an effective pluralistic extension system. The 2007 Comprehensive Assessment of the Agriculture Sector stated this goal: 'The extension system needs to transform from the transfer of technology model to a pluralistic extension system that involves multiple public and private sector service providers' (MoA, 2007: xviii).

The Liberian MoA actively promotes itself as a central facilitator and monitor. The government holds Agricultural Coordination Committee (ACC) meetings that gather

service providers at the national and county levels to help coordinate extension activities, avoid duplication of programs, share challenges and lessons learned, and maximize resources (Zinnah and Perry, 2011; Moore, 2014). Stakeholders from the MoA, donor-led projects, INGOs, domestic NGOs and the civil sector all cited the value of these forums in working towards an effective pluralistic system (Moore, 2014).

However, the practical realities of implementing pluralistic extension in post-conflict Liberia remain challenging. Power dynamics developed after the conflict that significantly affect pluralism in extension provision. Specifically, the MoA and the donor/NGO sector are not equal partners. International agencies took the lead in providing emergency food aid and extension services in the early post-conflict period (MoA, 2007). Even after a certain level of institutional capacity and governmental stability had developed, the MoA still relies heavily on international actors to serve Liberian farmers (Moore, 2014).

Funding differences in particular create this need. Simply put, the extremely well-funded donor-led and INGO programs have the capacity to hire and train talented officers, develop effective training curricula and materials, provide comprehensive services and inputs to farmers, and travel to serve farmers in remote areas, while the MoA struggles in all these respects.

Although policy asserts the need to work together at the field level, collaboration and partnership dynamics are quite skewed and heavily reliant on the donor/INGO sector to buoy the MoA in conducting extension activities. Limited resources and capacities leave most MoA officers unable to offer much assistance to their counterparts working with donor-led and/or INGO projects. In many cases, these officers and MoA officers have conducted joint training, but more commonly the capacity gap has repositioned officers with donor/INGO projects as leaders and MoA officers as learners at the level of client farmers (Moore, 2014).

Both the MoA and donor/INGO sectors are acutely aware of these power dynamics, and consequently have different levels of motivation to pursue pluralism. Because

many donor-led or INGO extension providers began operating during a period in which national policy was absent and the government lacked the capacity to operate, many international organizations became accustomed to operating independently. At the same time, donors/INGOs recognize that the MoA is reliant on their involvement, that they are driving the extension system and that correspondingly the MoA does not have the authority to significantly affect their operations. Convincing these organizations to foster pluralism in a more active manner, share resources and information, coordinate with the national government and adhere to overarching policy or strategic plans is a major challenge. In fact, some donor-led projects and INGOs (e.g. ACDI/VOCA, FED) have questioned whether pluralism really benefits their organizations or whether it instead represents an unnecessary use of their time and resources (Moore, 2014).

Nevertheless, most donor programs have increased their efforts to collaborate with the Liberian government in recent years. Donor programs and INGOs now provide considerable support to the MoA. ACDI/VOCA, the FED program, ZOA and other INGOs frequently invite MoA personnel to participate in in-service trainings, provide technical information and offer transportation to project sites (Moore, 2014). Unfortunately, despite intentions of equal collaboration by administrators, unequal capacities and roles at the field level often create a top-down relationship between MoA and donor project/INGO officers, which leads to tension and further complicates partnerships (Moore, 2014). Similar dynamics were found between donor projects/INGOs and their domestic NGO partners, where again disparities in skills and funding can lead to a top-down arrangement. As a result, pluralism is not functioning properly in post-conflict Liberia.

Coverage

An estimated 1 million smallholder farmers are active in post-conflict Liberia (CIA, n.d.), creating a huge audience for extension and

advisory services. However, poor coverage by extension providers remains a major weakness of the system. As discussed, the MoA employed only 72 field-level officers in 2014. All 15 counties employed a CAC but only half of Liberia's 68 districts had a dedicated DAO (USAID, 2008a). This results in extremely high farmer-to-officer ratios (1000:1 to 5000:1).

Poor coverage, while certainly not unique to post-conflict countries, is tied to Liberia's conflict. Vacant posts are often distributed along ethnopolitical lines, specifically with regard to the role of different groups in the conflict. The 'breadbasket' counties of Bong, Lofa and Nimba, the site of several rebel movements and home to a number of post-conflict parliamentarians, are generally well stocked with extension officers and receive considerable development attention. In contrast, southeastern counties, home to the Krahn ethnic group and the indigenous rebel leader Samuel Doe, who initiated the 1980 coup, have many fewer officers and receive considerably less development attention (Moore, 2014). Safety and security concerns also affect officer placement (Moore, 2014), largely depending on different regions' feelings of 'insiderness' versus 'outsiderness' with respect to the Liberian government.

Even in areas where its personnel are present, other factors have left MoA officers simply unable to serve all potential clients. Vehicles issued to CACs are used heavily to attend central administrative meetings and sparingly for projects (McNamara *et al.*, 2011). A handful of DAOs were issued motorcycles, although the low fuel allocations left many officers unable to use them. DAOs have reported spending their own salaries to hire transport to reach farmers or relying on INGOs for occasional transport to their client communities (Moore, 2014), which was not considered a sustainable operating model. As a result, Moore (2014) found that virtually all farmers interviewed never interacted with government extension officers, and that rural, female and youth farmers were the least likely to receive services from the MoA.

Donor-led projects and international and domestic NGOs play an important role

in addressing coverage challenges. As a component of partnership and pluralism policies, some projects, INGOs and local NGOs coordinate activities with the MoA to operate in areas where the government lacks the capacity to serve. For example, officers employed by the FED program help to serve in remote rural areas of Nimba and Lofa County that are otherwise understaffed by the MoA (DAI, 2012). However, these organizations generally work intensively with small groups of farmers, meaning their overall contribution to coverage is small (MEAS, 2011).

Many local NGOs and civil society organizations (e.g. CHAP, FUNL) also provide short-term services. This group of service providers is still growing and has limited capacity to contribute, but has been successful in working with otherwise marginalized audiences, such as female farmers, youth and farmers in remote areas of the country (including the traditionally underserved southeastern counties) (Moore, 2014). Still, despite these efforts, there are not enough extension personnel to serve all Liberian farmers, a factor that severely compromises the development of the agricultural sector. The ongoing capacity to expand coverage may also change when donor funding tied to post-conflict reconstruction—and later to Ebola response, which is a primary source of operational funding for domestic NGOs—is reduced in the future.

Extension Approaches/Models

Demand-driven extension (participatory extension models)

Making the transition to demand-driven and participatory models, based on farmer-led priority setting, hands-on and demonstration-based teaching and peer-to-peer learning, has proven difficult for the Liberian MoA (MEAS, 2011; Swanson, 2011). As previously described, an unwillingness to empower regions or ethnic groups with ties to the Liberian conflict to 'demand' services from the government is possibly a product of the

civil war, even though the Liberian government verbally promotes such bottom-up extension approaches.

Placing emphasis on participatory and learner-centric extension has also been a challenge. Consequently, many MoA personnel, especially older officers who served in extension before and through the conflict and were trained during the technology transfer era when workshops and lectures were emphasized, have struggled to adapt to this philosophical shift (USAID, 2008b).

Liberia's agricultural institutions (e.g. Cuttington University, University of Liberia) similarly fail to prepare younger officers with participatory skills (McNamara *et al.*, 2011; Moore, 2014). Agricultural institutions in countries emerging from conflict often lack quality instructors due to displacement and attrition, use outdated curricula and struggle with issues of social cohesion—all factors that compromise the quality and relevance of the education received by graduates (Buckland, 2005). This phenomenon also affects the knowledge and skills of Liberian graduates, who learn production and technical skills but lack capacity in participatory extension (Moore, 2014).

Lack of professional development is also a factor. While recent policies and administrative decisions have repositioned field-level MoA officers as facilitators, community mobilizers and communicators (Sulaiman and Davis, 2012; Ganpat, 2013), no corresponding pre- or in-service training has been provided to retool these officers for their new responsibilities, due to funding and logistical limitations. MoA officers therefore lack capacity in participatory extension (McNamara *et al.*, 2011).

The legacy of conflict may also create reluctance on the part of field-level officers to empower farmers to demand services. Some officers indicated that this repositioning of power dynamics affected perceptions of safety and security but also social standing (Moore, 2014). Combined with lack of training, this mindset severely compromises attempts to move towards demand-driven extension.

In contrast, donor-led projects and INGOs have proven to be very successful at

incorporating participatory extension methods into their work with farmers:

1. These organizations do not face the same post-conflict concerns. Empowering farmers to better dictate extension programming is seen as a positive endeavor to promote democracy, transparency and good governance, whereas the MoA has shown reluctance to fully engage in demand-driven models for the same reasons (Moore, 2014).
2. These organizations benefit from an operational strategy that is more conducive to participatory extension. Whereas the MoA is tasked with serving as many Liberian farmers as possible, donors and INGOs strategically focus on providing regular, comprehensive and longer-term services to fewer farmers. This level of interaction and responsiveness allows officers to develop trust with their farmers and to better understand their challenges and needs, which is essential for participatory extension to be effective (Swanson *et al.*, 1997).
3. Donor-led projects and INGOs also have the resources to better prepare their personnel in participatory extension methodologies. Field-level FED officers receive thorough pre- and in-service training that includes not only crop-specific technical information but also facilitation, agribusiness and cooperative management skills (DAI, 2012). They do not rely on the aforementioned agricultural universities and colleges to develop these skills and are therefore more capable and effective when working with farmers (Swanson, 2011; Moore, 2014).

In recognition of this gap, many donor projects and INGOs (e.g. ACDI/VOCA, FED) have made officer training available to members of the MoA. Unfortunately, without funding for transportation, lodging and daily expenses, the participation levels remain low and the potential benefits of free, high-quality professional development training are not maximized by the Liberian government (Moore, 2014).

This capacity gap also impacts the use of demonstrations and hands-on teaching. The use of demonstrations is heavily advocated by extension service providers (MoA, 2007). MoA administrators and field-level

extensionists consistently acknowledge the benefits of 'learning by doing' in retaining information and adopting new practices. However, the MoA lacks the tools, seeds and other resources to perform effective demonstrations, making the model difficult to implement for most field-level officers (Moore, 2014).

Land for demonstration sites is limited. In 2011 the MoA intended to create demonstration farms to accompany each county office, for conducting farmer field days and trialing new crop varieties and farming methods (McNamara *et al.*, 2011; Swanson, 2011). However, by 2014 only one county had a functional demonstration farm (Moore, 2014), suggesting the approach was more easily verbalized than operationalized.

The donor/INGO sector took a different approach that proved more successful. Rather than creating and operating their own sites, donors and INGOs identified 'lead farmers' from within their client base and obtained permission to use a portion of those individuals' land to conduct demonstrations and trials (Moore, 2014). This model placed the demonstration site central to where farmers worked, helped promote local buy-in by allowing the lead farmer to benefit from the innovations tested without risk to his/her own production and reduced maintenance costs to implementing organizations.

The demonstration farm approach also tied in closely with the promotion of peer-to-peer learning and information sharing within farmers' groups. The formation of strong and functional farmers' groups has been complicated in post-conflict Liberia. Social cohesion issues arising from the displacement and reintegration of rural peoples present challenges (Fearon *et al.*, 2009), as do concerns that farmers' groups are more easily mobilized (Unruh, 2009). Early aid programs that provided seeds, equipment and other inputs frequently resulted in the ad hoc creation of groups of farmers who were not traditionally affiliated, only to separate after input distribution was complete (Moore, 2014). This tendency made it difficult to conduct longer-term group projects that required cohesion and continued participation.

Certain regions also have cultural tendencies to work together or work apart. For example, the counties of Bong, Lofa and Nimba practice a *kuu* system whereby farmers arrange themselves into groups and rotate between farms to complete otherwise time-consuming tasks. *Kuus* have leaders and share information among members more readily (Moore, 2014). On the other hand, there is a cultural reluctance in some regions, such as the Krahn-dominated Liberian southeast, to be 'grouped' by the government or other extension providers. The perception is that farmers in this region view extension information as a competitive advantage and do not readily share with neighbors (Moore, 2014). Inability to practice group-based approaches has deterred some providers from working there. However, post-conflict ethnopolitical factors may also be involved, especially since the heavily indigenous region produced Samuel Doe and was central to initiating the Liberian conflict. Negotiating group dynamics and tailoring extension programming to cultural differences has been a challenge and remains a point of focus in the post-conflict period.

Another prominent peer-to-peer learning strategy is the Farmer Field School model, which the MoA promotes heavily (MoA, 2007; USAID, 2008a). Farmer Field Schools involve central training sites that enroll and train lead farmers in a range of production skills to share with their respective communities, thereby spreading information to new audiences (Davis *et al.*, 2010).

Where social cohesion and group-based farming is effective, the Farmer Field School approach has been quite successful in Liberia. In an analysis of farmers' perspectives, Moore (2014) found that participant farmers described considerable knowledge and skill acquisition and routinely expressed their intention to train their neighbors. Efforts to tie Farmer Field Schools to existing *kuus* has particular promise, as recent efforts to identify *kuu* leaders as lead farmers and encourage their participation in Farmer Field Schools have been extremely effective in spreading new varieties and methods (Moore, 2014).

However, the MoA has limited capacity to implement the approach. Lack of demonstration sites, poor technical capacity of trainers and insufficient resources to operate the schools remain problematic (USAID, 2008a). Again, donors, INGOs and specifically the FED program are the leaders in the Farmer Field School model in Liberia (Moore, 2014).

Market-driven extension (value chain approach)

Efforts to modernize extension in post-conflict Liberia also include broadening the focus on production to include a full value chain approach (Zinnah and Perry, 2011). Following the absence of cohesive policy and development strategy in the early post-conflict period, this objective is now a near consensus among public, donor-led and NGO service providers. Market-driven extension was included as a priority of the MoA's 2008 policy (MoA, 2008b). Value chain development is also a key component of the Feed the Future initiative and therefore the FED program (Ho and Hanrahan, 2011; DAI, 2012). With the two most influential service providers promoting 'agriculture as a business' (Moore, 2014: 148), other donor projects, INGOs and civil society organizations have refocused their strategies to follow suit.

Agreement on this priority helps to avoid competing agendas in service delivery. Coordination at the national level, in policy decisions and through the ACC meetings has allowed extension providers to prioritize specific value chains to avoid duplication (Moore, 2014). The government is focusing on rice and cassava value chains, supported by the FED program, which focuses on the two main staples plus vegetables and goats (DAI, 2012; Moore, 2014). BRAC programs center on poultry, while ACDI/VOCA, Winrock International and the World Bank emphasize cocoa, coffee, palm oil, rubber and other cash crops for international markets.

However, verbal consensus on value chain development leads to different outcomes when the capacities of providers are

considered. Despite administrative support, the MoA does not have a clear understanding of how to implement the value chain approach at the field level. Similar to capacities in participatory extension, MoA officers do not receive adequate training on value chain development and are therefore unable to incorporate key components (e.g. marketing, post-harvest handling, record-keeping) needed by farmers (Swanson, 2011). Most commonly, MoA officers promote higher quantity and quality of production with the assertion that this product will be attractive to buyers. However, lack of pre-established markets is a major obstacle. Liberia, like many post-conflict countries, struggles to access export markets due to a poorly developed trade infrastructure, minimal private sector involvement, and post-conflict and now Ebola-related stigma facing Liberian produce (Agwu *et al.*, 2012). Farmers who target domestic markets often overproduce and overestimate demand, which leads to unsold and spoiled produce and causes financial loss (Moore, 2014). Ebola further compromised the viability of local markets as buyers and producers alike lacked the mobility to trade (World Bank, 2015b).

One District Agricultural Extension Officer pre-arranged a buying agreement with the World Food Programme (WFP) to distribute beans grown by his farmers' groups to regional refugee camps. This relationship closely mirrored the WFP's Purchase for Progress (P4P) program, which exists in Liberia but on a small scale. Social cohesion concerns, inability of farmers' groups to meet production quotas and lack of rural infrastructure were cited as reasons (WFP, 2014). As a result, this case is unfortunately the exception and not the rule among MoA value chain programs. This individual had participated in a unique MoA exchange program that sent him to India to study agribusiness, and the experience provided the motivation to pursue this buying arrangement.

Donor projects and the INGO sector were far more effective at promoting the value chain approach. Officers receive pre- and in-service training in the range of skills needed to teach different components of the value chain (Moore, 2014). Again, the MoA

is invited to send its officers to these trainings. ACDI/VOCA, FED and other projects/INGOs also train specialists to emphasize different areas of the value chain. FED's business extension officers teach record-keeping, marketing and other agribusiness skills on a rotational basis, while crop production specialists guide farmers' groups through growing specific crops (DAI, 2012).

Donors'/INGOs' model of long-term involvement with smaller groups of farmers also allows different trainings and interventions held at different stages of the agribusiness chain, from planning, predetermining markets and record-keeping to post-harvest processing, storage and sales (Moore, 2014). When possible, organizations collaborate to maximize different agencies' relative strengths within the value chain. For example, while FED is effective in teaching agribusiness skills to farmers, the overall value chain is backstopped by equipment and processing training supplied by the FUNL, German Agro Action and the World Bank. The result is that farmers are linked to markets (Moore, 2014).

Institutional Capacity Building

In any post-conflict situation, strengthening the capacity of local institutions allows more effective and sustained development while also promoting governmental stability (Arthur, 2011; Cuinguara and Moder, 2011). When the MoA was incapable of providing extension services during the early emergency phase, donors and INGOs operated in parallel with, or sometimes counter to, the MoA in addressing pressing needs (MEAS, 2011). These actors prioritized emergency aid and service provision and did not emphasize or devote much time or resources to building institutional capacity. Without direct support, Liberia's public extension capacity increased slowly but still remains low. Following 2008 policies that called for collaboration and partnership, many large donor projects and INGOs (e.g. ACDI/VOCA, FED) have included a mandate to build MoA capacity in their programming

(DAI, 2012; Moore, 2014). The impending end to many project and funding cycles may also have served as a call to action.

However, strategic planning towards this objective is largely informal, and concrete activities to build the administrative capacity of the MoA are lacking. In addition, disparities in skills and funding lead to a top-down arrangement. Many donor organizations and INGOs attempt to include the MoA in their operations as a teaching strategy. Other efforts include disseminating technical information to the MoA, inviting MoA personnel to participate in in-service trainings and joint planning sessions, and providing transport assistance when feasible (McNamara *et al.*, 2011; Moore, 2014). However, donors and INGOs still remain the drivers of planning and operations.

In many ways, these efforts echo earlier emergency-phase models of distributing inputs to farmers. Providing access to technical information does not increase the MoA's capacity to conduct its own research, and distributing donor/INGO extension materials does not enable the MoA to create its own print or online resources. These strategies may pay short-term dividends, but their long-term impact is questionable.

Stronger efforts to incorporate MoA personnel into professional development trainings could have far greater long-term benefits. This training could potentially build sustainable administrative and technical skills within the public sector. Indeed, administrative training in Monrovia is effective and frequently attended, since transportation and lodging are not concerns for MoA participants. Unfortunately, MoA personnel are far less able to participate at the field level due to the aforementioned financial and logistical barriers. Donors and INGOs have not shown adequate efforts to remove barriers and maximize capacity-building opportunities (Moore, 2014).

Donors and INGOs also have a loose mandate to develop the capacity of domestic NGOs and civil society organizations. The Feed the Future initiative and major multilateral donors (e.g. Gates Foundation, World Bank) have advocated partnership between international and domestic NGOs

in serving farmers (Ho and Hanrahan, 2011). In Liberia, many donors and INGOs delegate field-level operations to local organizations but retain management over funds and materials. This model places domestic NGOs between clients and donor agencies, and sometimes makes aligning donor and client agendas difficult (Schuller, 2012; Moore, 2014). Furthermore, access to technical information and inclusion in professional development trainings was insufficient to build the capacity of domestic NGOs, which struggled greatly with administration, financial management, fundraising and advocacy skills that were not adequately addressed by donor partners (Blagescu and Young, 2006).

Implications and Recommendations

Liberia provides several important lessons and implications for other post-conflict countries. While many of the specific details are relative to the Liberian context, the overall themes are likely to be common to other nations practicing agricultural extension following violence and warfare. Similarly, key elements can be identified to effectively rebuild agricultural extension systems and programs in post-conflict settings. These are:

- Flexibility to adjust to changing policy environments and willingness to engage in policy creation and review.
- Sufficient, consistent and creatively utilized funding to support effective extension strategies and programs.
- Genuine commitment to and action towards pluralism in service delivery.
- Innovation in addressing coverage gaps and balancing personnel to meet farmers' needs.
- Conflict-sensitive extension approaches.
- Appropriate pre- and in-service training to support transitions in extension philosophies.
- Balanced coverage of all value chain elements to promote livelihood development.
- Commitment to and efforts towards institutional capacity building by international agencies.

Each component requires individual discussion, as follows:

1. Extension providers in post-conflict settings must be capable of working in an environment without set policies, willing to engage in collaborative policy creation and review processes, and flexible enough to adhere to new national policies and strategic plans when these are put in place. Post-conflict countries should expect a certain lack of synchronicity in extension during the early period as policies are developed, especially when donors and INGOs act autonomously and independently of governments to deliver emergency services. As government capacity allows, all stakeholders involved in extension service delivery should be prepared to engage in policy creation and planning efforts.

Inclusive policy making is critically important to post-conflict extension. It is essential to synchronize philosophies, strategies and objectives to avoid competing agendas that undercut one another. Governments that do not include other providers in policy making may face problems when policies are installed that do not align with existing donor/INGO strategies. For example, models of giving inputs versus building capacity affected outcomes in Liberia (Moore, 2014), and similar instances should be avoided. Also, while post-conflict governments should be central to policy making, donors and INGOs can help to create policy that is mutually beneficial, while simultaneously building institutional capacity in policy creation processes. Likewise, input from beneficiaries can allow policies to better represent the needs of farmers (Swanson, 2013).

In addition, donor organizations and INGOs must be receptive to policy shifts and support the implementation of policy, even if this means changing operational strategies. Failure to do so undercuts the efficacy of extension policy, leads to counterproductive power dynamics, undermines burgeoning governments and affects stability (Collier, 2006; Arthur, 2011).

Policy also needs to be flexible and allow for revisions as circumstances change.

Regular and systematic policy reviews must be planned and implemented in post-conflict extension systems. This requires governmental, non-governmental, private and civil society providers to conduct regular evaluation and to use adaptive management strategies, so that policies and year-to-year operating plans best represent the rapidly changing context found in post-conflict settings (Swanson *et al.*, 1997; Rossi *et al.*, 2004).

2. Funding levels and trends are central to the effectiveness and sustainability of extension systems. In Liberia, and likely in other post-conflict settings, funding levels determined coverage, capacity of personnel, access to technical information and other aspects of the system (USAID, 2008a; MEAS, 2011). Funding trends are also tied to the 'bubble' phenomenon of emergency aid, which is extremely high immediately following conflict or a major disaster but then declines (Schuller, 2012). When governments are underfunded, extension services available to farmers wax and wane with donor funding levels. For example, anticipated reductions in donor funding in Liberia called into question the sustainability of present service levels.

Large funding disparities between extension actors also create issues of power and accountability (Swanson and Rajalahti, 2010). These are particularly problematic when governments and domestic agencies are disempowered within their own countries. Post-conflict governments face additional challenges soliciting direct funding due to minimal track records of responsible borrowing, perceptions of poor governance and low institutional capacity. Multilateral donors are often hesitant to lend to post-conflict governments due to stability concerns and uncertain economic growth potential (Collier, 2006), even though these nations are likely the most in need of capital. To avoid directly funding government ministries, one option is to support the operations of field-level officers by addressing MoA funding shortfalls (e.g. transportation, materials), thereby leveraging funding to provide better public services while also building local capacity.

3. Commitments to pluralism must be extended beyond the boardroom and into

field-level operations. Providers must do a better job of identifying and utilizing the relative strengths and weaknesses of actors within the system. For example, the Liberian MoA recognized donors'/INGOs' technical advantage but did not adequately leverage this resource to its own benefit (USAID, 2008a; MEAS, 2011). Partners must seek ways to address any detrimental weaknesses. This may involve donors/INGOs and the MoA working together to remove barriers to participation in professional development trainings.

Ministries of agriculture should also be wary of deferring too much of service delivery to donors, INGOs and the private sector. In Liberia this led to problems when the MoA attempted to implement policy and strategic planning in an environment where donors and INGOs had previously operated autonomously (Moore, 2014). Also, many international organizations operate on short-term funding cycles (Schuller, 2012), which affects the availability of services when agencies' funding decreases or contracts end.

Expecting that privatized extension will become available to fill this void is not a viable strategy. Private sector development is often slow in post-conflict countries, due to instability, inefficient governments, poor infrastructure and a suboptimal business climate. In Liberia, the current model is to quickly commercialize groups of farmers so that they can eventually pay for private services (MoA, 2007). Unfortunately, there is little evidence to suggest that the private sector will be ready to take over in the near future.

Instead, ministries of agriculture should be more involved in activities that foster a sustainable pluralistic system with multiple service providers. Facilitating effective coordination and removing barriers for outside actors to operate is a vital role for post-conflict governments faced with low capacities to provide direct services. Monitoring better-funded donor projects or INGOs can help to ensure that extension activities follow national policy and move towards development objectives (Swanson *et al.*, 1997). Profit-driven private extension services should be encouraged through the removal of barriers to their operation, but

must also be monitored to prevent them from disproportionately benefitting financially successful farmers with the capacity to pay, while underserving poor, female or other marginalized farmer populations (Feder *et al.*, 1999). Without governmental oversight, this could potentially lead to the same levels of disparity that contributed to conflict in the first place.

4. Considerable coverage limitations and high farmer-to-officer ratios are common to extension in the developing world and are particularly unlikely to be addressed in post-conflict countries (Birner *et al.*, 2011). Even with donor and INGO funding and personnel numbers at peak levels, most Liberian farmers do not receive direct services from providers. Alternative means are needed to minimize coverage gaps in Liberia and other post-conflict settings.

Although direct funding that allows ministries to employ more officers is unlikely, one potential avenue is to use community-based extension volunteers. The FED program employs youth in this role (Moore, 2014), and a number of other countries advocate the coverage benefits of farmer-to-farmer extension approaches (Franzel, 2015). Of course, issues of social cohesion, safety and security, funding sustainability and individual capacity must be considered before mobilizing community extensionists in post-conflict settings.

Similarly, informal youth officers, especially those who are lightly subsidized, can be a major boon. They are already present in the community and know the context, people and local language. They can also receive basic information from central extension personnel/institutions by phone, which they can then disseminate to farmers for a small fee. Also, employing rural youth as extension officers may attract these young people to remain in or return to agriculture. Providing them with nominal employment can also reduce their susceptibility to mobilization and willingness to engage in further conflict.

The use of ICT to spread information messages remains underutilized across the developing world but especially in post-conflict countries (Asenso-Okyere and Mekonnen, 2012). While mobile phones

represent a way to reach huge numbers of farmers in Africa and across the developing world with important extension information, post-conflict countries still face challenges. Often this results from the destruction of infrastructure during conflict. In Liberia, destruction of the national hydropower plant has made the availability of electricity a limiting factor. A potential solution in contexts of extreme infrastructure limitations is radio. Rural radio has been expanded in recent years and now provides extension messaging to multiple counties (Swanson, 2011). Distribution of low-cost solar radios may be a feasible alternative and has been successful in other post-conflict settings (e.g. Timor Leste) where physical infrastructure was destroyed.

While not addressing overall coverage, post-conflict countries that rebalance personnel can better serve target demographics. Extension officers who work with youth, women and other marginalized farming populations are essential to promoting development, peace and stability (Blattman and Annan, 2012). In Liberia, many MoA extension personnel are older and nearing retirement age. At the same time, a large pool of talented young extension officers may become available as donor programs withdraw, including many highly trained female officers who are effective in working with women farmers (Meinzen-Dick *et al.*, 2011). A short-term influx of money from the Liberian government could fund retirement packages and signing bonuses, to entice younger officers to join the MoA. Younger officers can better relate to youth farmers.

5. Public extension systems in the developing world often strive to be more modern, decentralized and participatory, and to provide demand-driven services to farmers (Swanson and Rajalahti, 2010). While these approaches may be beneficial in stable countries, decentralization and demand-driven extension in particular may not be appropriate in the short term for post-conflict countries. Empowering local leaders and farmers to form groups and have a greater capacity to make 'demands' of newly established governments may be seen not as a

path towards more effective extension but instead as a threat to peace and stability. In Liberia, this may contribute to differences in the actions taken by the MoA and those taken by the international community. Therefore, hesitation by extension administrators in post-conflict Liberia to embrace decentralization and demand-driven extension is not only understandable but expected. Policy makers and agenda setters must take these dynamics into account when selecting extension models and pursuing extension reform.

6. Philosophical shifts in extension approaches cannot be effective at the field level without corresponding retraining of extension personnel. Training of extensionists often ends during conflicts, meaning that officers in post-conflict periods may possess skills and information that are years out of date (Birner *et al.*, 2011). Additionally, extension officers undergo a process of skill deterioration termed ‘forgetting by not doing’ when extension services are suspended. This further exacerbates capacity decline (Collier and Duponchel, 2013: 67).

In Liberia, government extension officers need to be retrained in both participatory and market-driven extension to address these objectives, yet efforts towards this remain insufficient (MEAS, 2011; Swanson, 2011). Some MoA administrators assume that trained officers would migrate to the MoA after donor projects in Liberia end, thereby closing the capacity gap without requiring the MoA to provide its own training (Moore, 2014). However, this belief ignores the maintenance factors (e.g. low salary, lack of materials, poor upward mobility within the organization) that deter many of these individuals from working for the MoA in the first place. Instead, Liberia needs to take better advantage of donor or INGO training that is available, especially since this opportunity will not last forever. Other post-conflict countries should also capitalize on available avenues to contemporize the skills of their officers.

7. Market-driven extension can only be a step towards improved rural livelihoods if no gaps remain in the value chain approach. In Liberia, extension programs emphasized

production of a few crops (e.g. rice, cassava, cash crops) without considering demand and market conditions. Export markets may be a more feasible long-term objective, with a focus on local markets a more realistic approach. Greater efforts to engage producers in P4P programs that supply refugee camps and school feeding programs would be especially beneficial in post-conflict settings where the demand for food aid is high (WFP, 2014). Coordinated local marketing can also avoid local markets being flooded with commodities, thereby driving down prices received by farmers while increasing the prices of other foods that those rural communities consume (FAO, 2013).

Market-driven extension must also provide adequate training on processing and storage while simultaneously implementing programs or lending schemes that allow farmers to purchase necessary equipment or materials. Transportation issues related to post-conflict infrastructure conditions, security concerns, low post-conflict private sector involvement and distance to markets must also be considered when advocating production schemes for farmers. These gaps in the value chain approach lead to high post-harvest loss in Liberia (Moore, 2014) and should be better addressed to truly enhance livelihoods.

8. Capacity-building agendas must focus on developing institutions and civil society organizations, rather than focusing exclusively on developing the capacities of beneficiaries. Donors must recognize that low governmental capacity is an inevitability of post-conflict settings, and that enhancing rather than circumventing local institutions can build institutional capacity to promote sustainable growth. Strong domestic actors can also provide a better and more sustainable level of service to farmers over the long term, rather than the peaks and valleys that accompany donor initiatives and funding cycles (Abi-Ghanem *et al.*, 2013). Also, developing the ability of ministries of agriculture and local NGOs to serve farmers effectively can foster positive farmer–government interactions that promote peace and stability (Collier, 2006; Arthur, 2011). Strengthening the public and civil sectors could have

this effect in Liberia as well as in other post-conflict countries.

Clearly many challenges exist in post-conflict extension systems. However, successes and opportunities remain abundant even in this difficult period. Liberia has made considerable progress and has taken many important steps towards modern, pluralistic and farm-

er-driven extension that should provide dividends well beyond the agricultural sector. It is the responsibility and challenge of individual post-conflict countries to consider and adapt the Liberian case to local conditions. This will require innovation, flexibility, collaboration and political will, yet the benefits can be fundamental to promoting peace, stability and long-term development.

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