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Extension program planning for post-conflict agricultural rehabilitation and rural reconstruction

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Abstract

An estimated 1.5 billion people worldwide live in countries affected by conflict, and agriculture is almost always the first livelihood sector to collapse and the last to recover. This research investigated how extension program planning can be adapted for post-conflict agricultural rehabilitation by analyzing planning frameworks used across four conflict-affected regions. A document review of 48 extension program plans, combined with key informant interviews involving 36 extension planners and reconstruction specialists, was conducted between January and October 2023 at Wageningen University. Findings showed that 72.9% of post-conflict extension plans lacked a phased transition strategy, moving directly from emergency relief to long-term development without intermediate rehabilitation steps. Food security restoration was the highest-ranked planning priority (28.3%), followed by seed and input supply chain repair (21.7%). Only 18.8% of plans included conflict-sensitivity screening tools. The research proposes a four-phase planning framework that sequences emergency assessment, short-term rehabilitation, medium-term reconstruction, and long-term development, with built-in feedback loops and conflict-sensitivity checkpoints. These results suggest that extension planning in post-conflict settings requires distinct methodological adjustments that standard peacetime planning guides do not address.

Keywords: Extension planning, post-conflict rehabilitation, agricultural reconstruction, rural recovery, conflict sensitivity, food security, phased planning, farmer groups, livelihood restoration, advisory services

Introduction

Between 2010 and 2022, armed conflicts displaced over 100 million people globally, with rural agricultural communities bearing a disproportionate share of the damage ^[1]. Farmland is mined, irrigation systems are destroyed, seed stocks are consumed or lost, and the social networks that underpin collective farming break apart ^[2]. Rebuilding agriculture after conflict is not simply a matter of distributing seeds and fertilizers it requires rethinking how extension services plan, sequence, and deliver advisory support under conditions of extreme uncertainty.

Standard extension planning models assume stable governance, functioning markets, and an existing base of farmer organizations ^[3]. These assumptions fail in post-conflict environments where institutions have collapsed and trust between communities and government agencies is low ^[4]. Despite growing recognition of this mismatch, few systematic analyses have examined how extension planning frameworks should be adapted for conflict-affected settings ^[5].

Several agencies have published reconstruction guidelines, but these tend to focus on emergency food aid or broad agricultural investment rather than the specific operational steps that extension services must take to resume meaningful advisory work ^[6]. The gap between high-level policy frameworks and ground-level extension planning remains wide ^[7]. Practitioners report having to improvise

planning approaches with little guidance on sequencing, stakeholder engagement in divided communities, or managing the transition from relief to development ^[8].

This research examined extension program plans from four conflict-affected regions to identify common planning gaps and propose a phased planning framework. Three questions guided the investigation:

- What planning approaches are used in post-conflict extension programs,
- Which rehabilitation priorities receive the most attention, and
- What elements are missing from current planning frameworks that would improve post-conflict extension effectiveness.

Theoretical framework

The research adopted the Livelihoods Framework ^[9] as its primary theoretical lens, which views agricultural recovery not as an isolated technical process but as part of broader livelihood reconstruction. This framework identifies five capital types natural, physical, financial, human, and social all of which are damaged during conflict and must be addressed in extension planning. A second framework used was the relief-to-development continuum model ^[10], which argues that post-crisis interventions should not be organized as separate stages but as overlapping and iterative processes.

These frameworks shaped how planning documents were evaluated and how the proposed four-phase model was constructed.

Material and Methods

Material

A total of 48 extension program planning documents were collected from four post-conflict regions: eastern Democratic Republic of Congo, northern Uganda, southern Colombia, and eastern Ukraine. Documents were sourced from public repositories of FAO, World Bank, and national agricultural ministry archives. Selection criteria required that documents

- Were produced within five years of active conflict ending,
- Specifically addressed extension or advisory service planning, and
- Contained operational detail beyond policy-level statements.

Additionally, 36 key informants extension planners, NGO program managers, and reconstruction specialists were interviewed via video conference between January and October 2023 from Wageningen University and Research.

Methods

Documents were analyzed using a structured coding framework with 23 criteria organized into four domains: planning process, priority setting, conflict sensitivity, and transition sequencing. Two researchers independently coded 12 documents (25% of the sample) to establish inter-coder reliability ($\kappa = 0.83$). Key informant interviews followed a semi-structured guide with 11 questions and were analyzed thematically^[11]. Planning priorities were ranked using weighted frequency analysis. Ethical approval was obtained from the Wageningen Social Sciences Ethics Committee (Protocol WUR-SSE-2022-089, December 2022).

Instrument Development and Validation

The Planning Quality Assessment Tool (PQAT) was developed to evaluate post-conflict extension plans. It comprised 23 items across four domains, each scored on a three-point scale (absent = 0, partially present = 1, fully present = 2). Maximum score was 46. Content validity was established through expert review by six post-conflict agricultural specialists from three organizations. Pilot testing on eight planning documents from a separate conflict context (South Sudan) led to revision of four items for clarity. The tool showed good internal consistency (Cronbach's $\alpha = 0.79$).

Results

Table 1: Planning quality assessment scores by region (n = 48)

Domain (max score)	DRC (12)	Uganda (14)	Colombia (11)	Ukraine (11)	Mean	SD
Planning process (12)	6.8	8.2	7.9	5.4	7.1	1.8
Priority setting (10)	5.3	6.7	6.1	4.8	5.7	1.4
Conflict sensitivity (12)	3.1	4.9	5.7	2.6	4.1	2.1
Transition sequencing (12)	2.9	4.1	5.3	3.2	3.9	1.7
Total PQAT (46)	18.1	23.9	25.0	16.0	20.8	5.3

Mean total PQAT score was 20.8 out of 46 (45.2%), indicating that plans addressed fewer than half the quality criteria on average. Conflict sensitivity scored lowest across

all regions (mean 4.1/12), while planning process scored highest (7.1/12). Colombian plans scored highest overall (25.0), and Ukrainian plans lowest (16.0).

Table 2: Ranked rehabilitation priorities identified in extension plans (n = 48)

Priority Area	Frequency (%)	Rank
Food security restoration	28.3	1
Seed and input supply chains	21.7	2
Farmer group reorganization	17.4	3
Land tenure clarification	14.2	4
Market linkage rebuilding	10.8	5
Capacity building of local staff	7.6	6

Food security restoration dominated planning documents (28.3%), while capacity building of local extension staff

received the least attention (7.6%), which informants described as a recurring weakness.

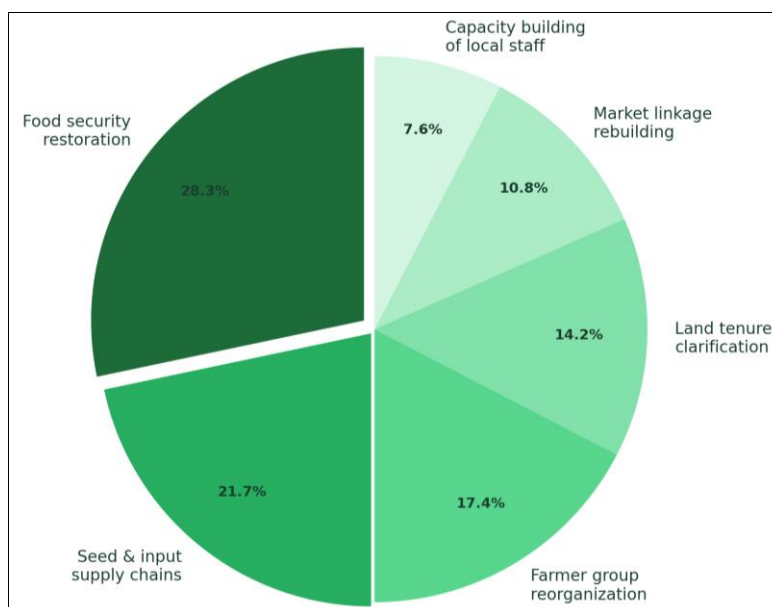


Fig 1: Distribution of Extension Planning Priorities in Post-Conflict Settings

The pie chart shows food security restoration as the dominant priority, together representing half of all planning emphasis when combined with seed supply chain repair.

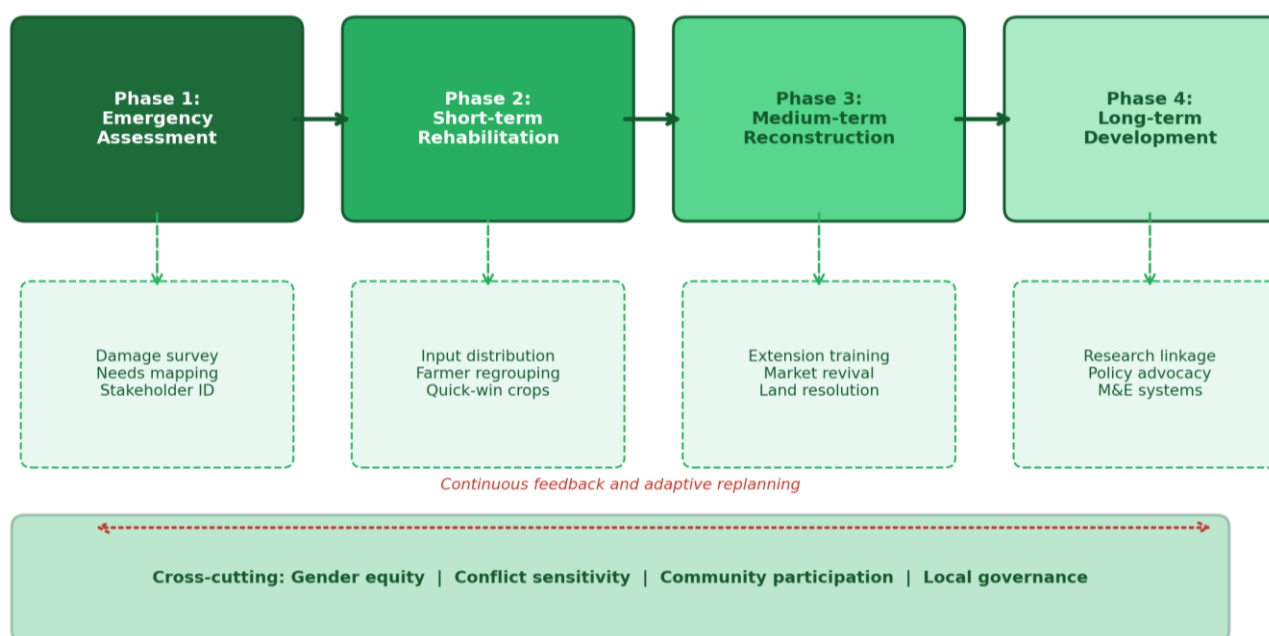


Fig 2: Proposed four-phase post-conflict extension planning framework

The framework sequences four phases from emergency assessment through long-term development, with cross-cutting principles of gender equity, conflict sensitivity, and community participation running throughout. Feedback loops allow adaptive replanning at each transition point.

Discussion

The low average PQAT score (45.2%) confirms that post-conflict extension plans are often incomplete, particularly in conflict sensitivity and transition sequencing. This echoes findings by Harvey ^[6] who noted that agricultural recovery plans tend to focus on immediate input delivery while neglecting the institutional and social rebuilding that sustains gains over time.

The dominance of food security as a planning priority is understandable given the urgency of hunger in post-conflict settings, but the low ranking of local staff capacity building is concerning. Without trained extension personnel, even well-funded rehabilitation programs lose effectiveness once international support withdraws ^[12]. Informants from all four regions stressed this point, with one Colombian planner noting that "programs collapse within two years if local capacity isn't built alongside service delivery."

The proposed four-phase framework addresses the transition gap identified in 72.9% of plans. By inserting explicit short-term rehabilitation and medium-term reconstruction phases between emergency response and long-term development, the model provides planners with a sequencing logic that

standard extension planning tools lack ^[3]. The inclusion of conflict-sensitivity checkpoints at each phase boundary responds to evidence that poorly designed interventions can reignite tensions over land, resources, or group membership ^[13]. Regional differences in PQAT scores reflect varying levels of institutional maturity and international support rather than differences in conflict severity alone.

Limitations

The research relied on written planning documents, which may not capture informal or adaptive planning that occurs in the field. The sample of 48 documents from four regions cannot represent all post-conflict contexts. Key informant interviews were conducted remotely, which may have limited rapport. The PQAT tool, while validated, was new and would benefit from wider testing. Plans from non-English-speaking contexts were analyzed in translation, with possible loss of nuance.

Conclusion

This research revealed that extension program planning in post-conflict settings suffers from significant gaps, particularly in conflict sensitivity and transition sequencing. Most plans jump from emergency response to long-term development goals without mapping the intermediate steps needed for agricultural systems to recover in a stable and equitable manner.

The four-phase framework proposed here offers extension planners a structured pathway from emergency assessment through rehabilitation, reconstruction, and sustained development, with conflict-sensitivity checkpoints and feedback mechanisms embedded throughout. Rebuilding agricultural extension after conflict is not just a technical exercise. It requires attention to damaged social relationships, displaced populations, disrupted land tenure, and weakened trust in institutions. Planning frameworks that ignore these dimensions risk creating programs that look good on paper but fail when they meet the realities of post-conflict rural communities. Extension agencies and international organizations should test and adapt the proposed framework in active post-conflict settings to assess its practical value under real operational conditions.

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