

Emergency Agriculture Interventions: Reviewing evidence on the impacts on livelihoods, food security, and nutrition

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Key points

- In 2020 the SEADS Project systematically reviewed the impact of agriculture interventions in humanitarian crises, focusing on impacts on livelihoods, food security, and nutrition. The review covered all of the main types of emergency agriculture programming, including seeds, tools and other inputs, farmer training, pest and disease control, and market support.
- From more than 250 evaluations and studies, only 2 documents were categorized as “strong” evidence, and only 26 documents were categorized as “moderate” evidence. The majority of documents were categorized as “weak” due to various weaknesses in evaluation, research design, and reporting. These weaknesses included limited description of context, limited measurement of agriculture production, and assumptions that improved production translated into livelihoods benefits. Since specific details on project design were often omitted from evaluation reports, the technical plausibility of inputs leading to outputs and impacts was often difficult to assess.
- Although emergency agriculture interventions are often framed around livelihood, food security, or nutrition objectives, very limited evidence exists to show that these objectives are achieved. The paucity of evidence does not mean that these interventions have no impact. It does mean that monitoring and evaluation (M&E) systems, impact evaluations, and research studies are not measuring and explaining impacts using approaches that produce good-quality evidence.
- Humanitarian aid donors and implementing organizations should critically review their commitment to understanding impacts. They should also consider how evidence is used to guide funding and programming decisions.

Introduction

The SEADS Project aims to improve the quality and impact of agriculture interventions for people affected by humanitarian crises. The Project is developing Standards and Guidelines for a range of users, including humanitarian practitioners, aid donors, and agriculture specialists. SEADS is overseen by an international Steering Group comprising the American University of the Caribbean; Catholic Relief Services; the Food and Agriculture Organization of the UN; the International Committee of the Red Cross; Livestock Emergency Guidelines and Standards (LEGS); Norwegian Refugee Council; SOS Sahel Sudan; Tufts University; and World Vision.

Typically, agriculture interventions in emergencies do not aim to save lives. Rather, they aim to protect or support livelihoods, food security, or nutrition. Therefore, the process for developing the SEADS Standards requires an understanding of the specific types of agriculture interventions that achieve livelihoods, food security, or nutrition impacts in different emergency contexts.

Between May and December 2020, the Project systematically reviewed evidence covering rapid onset, slow onset, and complex emergencies in low- and middle-income countries. The review was conducted to ensure that SEADS draws on the best-available evidence on the impacts of emergency agriculture interventions. The review covered seven main types of agriculture interventions that are typically used by humanitarian organizations and governments:

- » agriculture knowledge transfer: includes methods to assess skills, and to design and generate knowledge products and the associated delivery mechanisms to support various types and scales of training
- » agriculture production methods: includes package approaches, such as conservation agriculture or hydroponics, that make up a system, rather than individual interventions under each approach

- » infrastructure, tools, and machinery: includes direct provision of materials and assistance for infrastructure repairs, maintenance, and market systems to make materials more available
- » markets systems: includes interventions related to core market function (using, supporting, or developing markets on both the supply side and demand side); supporting functions (services and infrastructure); and policies, norms, and rules
- » pest and disease control: includes direct provision of pesticides or control accessories and support to systems that give farmers the means to respond to various pest and disease issues
- » securing land access: includes primarily indirect interventions focused on ensuring that producers have access to land for production
- » seeds and seed systems: includes direct provision of seeds and support to systems that give farmers the means to obtain seed

These types of interventions were identified by the SEADS Steering Group members and confirmed by a rapid survey of the main humanitarian donors in April 2020.

Evidence review design

The SEADS Project hired external consultants to review the evidence. These consultants were required to have at least 10 years' experience in evaluating agriculture and/or humanitarian work in developing regions; a good understanding of emergency agriculture response, with specific experience related to the intervention types they would review; and a strong understanding of evidence-based approaches and related evaluation designs and methods in emergency contexts.

Each consultant covered one of the types of interventions listed above. The consultants used a standardized approach, first collecting

and screening literature, then categorizing selected documents according to the quality of evidence that each document represented.

SEADS advised all the consultants to use the following online databases: CAB Abstracts, Science Direct, the ALNAP Humanitarian Evaluation, Learning and Performance Library, and the United States Agency for International Development (USAID) Development Experience Clearinghouse. Additionally, they were requested to use all other databases that are relevant to the specific intervention area they were researching. SEADS also acquired literature through the networks of SEADS Steering Group members, Field Team members, and the consultants. The SEADS Project also sought to include academic journal papers and donor and non-governmental organization (NGO) evaluation and impact assessment reports.

For database searches, consultants used search terms that covered context, general programming approaches, and specific interventions. Context-related terms included “emergency,” “disaster,” and “humanitarian.” General programming terms included “agriculture,” “food security,” “livelihoods,” “disaster risk reduction,” and “resilience.” Specific intervention terms included “tools,” “seeds,” “markets,” “training,” and similar terms depending on the topic. Consultants also used terms for specific types of disasters, such as “drought” and “flood.”

Consultants reviewed each document using an evidence checklist (Figure 1). The checklist was based on guidelines for evaluation produced by the UK’s Department for International Developmentⁱ and the United States Agency for International Development,ⁱⁱ experiences with developing the evidence database of LEGS from

Figure 1. SEADS Evidence Checklist Indicators



2006 to 2019; and commonly used criteria for the peer review of scientific journal papers. The checklist’s 12 indicators provide considerable scope for evaluations of emergency agriculture interventions beyond randomized control trials (RCTs). Evaluations that used mixed methods, qualitative methods, or participatory methods could be categorized as moderate or strong evidence, as long as certain conditions of the checklist were met. To be categorized as strong or moderate evidence, a document had to first satisfy the two indicators related to livelihoods context and livelihood impacts. Then, the consultants’ technical expertise and experience guided their use of the remaining checklist indicators as relevant and appropriate to their intervention area.

Following the consultants’ reviews, the SEADS Steering Group reviewed the consultants’ categorization of moderate and strong documents by using the checklist to confirm the consultants’ categorization. They also confirmed that the emergency context of the intervention fell within the scope of SEADS. If the emergency context was unclear, a document could not be considered moderate or strong evidence.

Evidence review findings

Documents collected and evidence categorization

Across the seven types of agriculture interventions, more than 250 documents were initially selected as relevant to emergency agriculture. These documents were subjected to an initial screening. Following the initial screening, 168 documents were judged to be relevant to SEADS. They were categorized against the evidence checklist. See Table 1.

Notably, across the different types of emergency agriculture interventions, only 2 documents were categorized as “strong” evidence, and only 26 documents were categorized as “moderate” evidence.

Why is evidence so weak?

When considering the findings of the evidence review, it is important to recognize that limited evidence on the impact of a particular type of emergency intervention does not mean that the intervention has no impact, but that *evidence* of impact is weak. Some of the main reasons

Table 1. Categorization of Documents by the SEADS Evidence Review

Type of emergency agriculture intervention	Number of documents by type of evidence			Total
	Weak	Moderate	Strong	
Agriculture knowledge, skills, ability transfer	11	2	0	13
Agriculture production systems	17	2	0	19
Infrastructure, tools, equipment	17	9	1	27
Market systems	32	4	0	36
Pest and disease control	6	0	0	6
Securing land access	1	4	1	6
Seed and seed systems	56	5	0	61
Total	140	26	2	168

Why is evidence so weak?

- » lack of clear emergency context
- » delivery, not impact, was measured
- » impact timing does not align with intervention timing
- » common bundling of interventions prevents the disaggregation of what caused the impact
- » the technical plausibility of inputs leading to impact was weak
- » the focus was on production not impact of improved production
- » baseline data on production was absent

SEADS categorized documents as weak evidence are:

- » **The evidence lacks a clear emergency context:** A substantial number of documents described interventions as “emergency” or “humanitarian” but were relatively lengthy projects targeting people in areas affected by chronic food insecurity. Although these areas were often subject to events such as droughts, conflict, or rapid-onset natural disasters, the framing of these projects was about addressing food insecurity and not about providing humanitarian assistance during an emergency or in its immediate aftermath. Projects addressing food insecurity in a non-emergency context fall outside of the scope of SEADS.
- » **Delivery, not impact, was measured:** Many documents did not measure impacts on food security, livelihoods, or nutrition. Measurements tended to emphasize the delivery of inputs, rather than outputs or impacts. For example, an evaluation might report that an intervention delivered seed to a certain number of households. It did not describe how the receipt of this seed translated into household food consumption, income from crop sales, or uses of income from crop sales. SEADS’ livelihood approach requires a focus on impact resulting from production;

production increases alone are not sufficient to ensure a livelihood impact.

- » **Impact timing does not align with intervention timing:** In some interventions, livelihoods or food security impacts are expected to occur months after the end of a project. This challenge is particularly relevant to agriculture interventions that respond to rapid-onset emergencies with activities that are production oriented. Depending on the local agriculture production cycle, crop harvests and related benefits were often assumed post-intervention, rather than measured. Documents that assumed this post-intervention impact were qualified as weak.
- » **Common bundling of interventions prevents the disaggregation of what caused the impact:** Many emergency agriculture interventions use multiple types of assistance. For example, inputs such as seeds and tools might be combined with pest control or farmer training. In these cases, an evaluation might describe impacts on households but not distinguish between the different interventions or recognize that one or more components of the package might have achieved very little or no impact. As a set of Standards and Guidelines, SEADS needs to know the relative impact of the different interventions, and ideally, the relative benefit-cost. In many documents, it was impossible for the reviewers to separate the interventions to understand which interventions contributed to the impact.
- » **The technical plausibility of inputs leading to impact was weak:** It was often difficult to assess the technical plausibility of inputs leading to impacts. In many cases, the description and justification for inputs was too brief. For example, the reason for providing a specific amount of seed or a voucher with a specific value was often unclear. It was also unclear how these amounts or values relate to local farming practices and areas of land cultivated. Similarly, expected impacts were poorly defined. If an intervention aimed to increase

incomes from the sale of agriculture produce, what was the target increase in income and how relevant was this amount relative to household economies? Even if a document described that an intervention resulted in households' incomes increasing, it could be qualified as weak evidence due to a lack of information related to the relevance of this increase.

- » **The focus was on production, not impact of improved production:** Many interventions aimed to increase agriculture production, but assumed that production gains automatically translated into livelihoods, food security, or nutrition benefits. Experience from the impact evaluation of development projects clearly shows the risk of these assumptions. For example, restricted market access might prevent sales, or household-level decision making by men might prevent the use of income by women for buying nutritious foods. Therefore, we cannot assume any intervention that led to an increase in production had a positive impact on livelihoods. We must see the livelihoods impact documented also.
- » **Baseline data on production was absent:** Many documents did not have good baseline figures for agriculture production. If there is no baseline production data, rational targets for production cannot be set relative to the type and quantity of intervention inputs. Therefore, impacts (or even outputs) cannot be measured. SEADS understands that conventional surveys of production might not be feasible in many emergency contexts, especially rapid-onset emergencies, but projects rarely referred to secondary literature from local agriculture research institutes or other sources on the affected area or comparable areas. Much evidence came from NGOs with a long-term presence on the ground through development projects. Even these presented limited reference to baseline agriculture production data.

What is next for SEADS?

The SEADS Project remains committed to developing Standards and Guidelines based on the evidence of emergency agriculture interventions on people's livelihoods, food security, or nutrition. The first edition of the SEADS Standards will be drafted in 2021. It will draw on the evaluation and research that was found to be moderate or strong evidence. A full list of these documents will be made available on the SEADS website. At the same time, our search for evidence remains open. The SEADS Coordinator can continue to receive impact evaluations and studies. The Standards will highlight the types of agriculture interventions for which the evidence of impact is limited. It will outline the risks of using these interventions based on assumed benefits. This first edition will also include a chapter on monitoring and evaluation. The inclusion of this chapter will emphasize the need for far-better impact evaluation of agriculture interventions in emergency contexts.

A draft of the SEADS first edition will be available for public consultation and simulated field testing with our partners in different regions before the handbook is published in 2022.

How will SEADS address weak evidence?

- » continue to search for evidence
- » outline the risks of using interventions based on assumed benefits
- » provide M&E minimum standards
- » value practitioner experience through public feedback and simulations
- » advocate for strengthened commitments to understanding impacts
- » advocate for new funding and programming to be guided by evidence
- » advocate for investments in evidence-based learning and programming in emergencies

What is next for impact evaluation of emergency agriculture?

The findings of the SEADS evidence review are consistent with the low quality of evidence on humanitarian assistance generally and related long-term debates on how to improve the monitoring and evaluation of humanitarian interventions.ⁱⁱⁱ The SEADS evidence review accommodated various evaluation and research designs and methods. It did not rely on quantitative case-control studies, to ensure maximum inclusion of emergency experience. However, the overall conclusion is that there is limited evidence on the impact of emergency agriculture interventions on people's livelihoods, food security, or nutrition.

SEADS proposes that aid donors and implementers of emergency agriculture interventions critically review their commitment to understanding impacts, and the extent to which evidence of impact and effectiveness guides new funding and programming decisions. Although it is beyond the scope of this Briefing Paper to make detailed recommendations on how to improve impact evaluation, organizations could consider the external and internal incentives for investing in more evidence-based learning and programming in emergencies specifically. They should also consider the need to use good-practice impact evaluation or strengthen M&E systems for impact measurement.

ⁱ Department for International Development (DFID). (2014). *Assessing the strength of evidence* (How-To-Note, March). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/291982/HTN-strength-evidence-march2014.pdf

ⁱⁱ United States Agency for International Development (USAID). (2016). *Evaluation policy*. <https://www.usaid.gov/sites/default/files/documents/1870/USAIDEvaluationPolicy.pdf>

ⁱⁱⁱ For example, see Frerks, G., & Hilhorst, D. (2002). *Evaluation of humanitarian assistance in emergency situations* (Working Paper No. 56, Wageningen University). <https://www.unhcr.org/en-us/research/working/3c8398434/evaluation-humanitarian-assistance-emergency-situations-georg-frerks-dorothea.html> and Hofmann, C-A., Roberts, L., Shoham, J., & Harvey, P. (2004). *Measuring the impact of humanitarian aid. A review of current practice* (HPG Research Report 17). Humanitarian Policy Group, Overseas Development Institute. https://cdn.odi.org/media/documents/281_GhDLN0z.pdf

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