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# Evidence Brief



**Syria:**

## Do Complex Agricultural Interventions Strengthen Food Security?

July 2021

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## Suggested Citation

Baliki, G., Brück, T., and Ghattas, H., (2021). "Syria: Do Agricultural Interventions Strengthen Food Security?" ISDC Evidence Brief, July 2021.

## KEY FINDINGS

- FAO's agricultural Interventions causally and significantly strengthen the food security of vulnerable smallholders in Syria by 13% which is particularly evident for households who received emergency support.
- Female-headed households benefited considerably from the programme, increasing their food security status by 32% compared to female-headed households who did not receive support.
- Impact was also stronger for households with access to irrigation, who saw a notable improvement of 23% in their food security status due to the programme.
- Examining the specific intervention types, we find that the overall impact on food security is driven by the provision of vegetable kits and seedlings. We find no significant impact for poultry, beekeeping and livestock vaccination.

## LESSONS LEARNT

- Building resilience requires comprehensive and integrated programmes with a long-time horizon to counter the multiple shocks in an emergency setting.
- Fine-tuning and strengthening targeting is vital as we observe varying heterogeneous impacts.
- Clustering interventions, rather than spreading them widely and thinly leads to stronger benefits.
- Conceptualising the intervention as an agricultural social safety net for bad times is key.
- Continuing to strengthen rural markets in Syria as a way of reducing dependency on credit.
- Investing in learning about how best to build food security through humanitarian agricultural interventions in conflict-affected settings.

## Study Objective and Context

We analyse the impacts of a complex agricultural intervention on households' food security status as well as agricultural crop and livestock production in a humanitarian setting. We also consider income generated from agricultural value chain activities and individuals' use of harmful livelihood strategies to cope with shortages of food. The impact analysis adopts a quasi-experimental approach using household survey data collected from beneficiary (treatment group) and non-beneficiary (control group) households in Syria before, during and after the interventions took place (3 waves in total). We also explore whether the outcome indicators vary meaningfully by gender and by access to irrigation.

Funded by FCDO, FAO Syria implemented the "Supporting emergency needs, early recovery and longer-term resilience in Syria's agriculture sector" programme, delivering "emergency" and "recovery" support to vulnerable smallholder farmers across Syria. The programme ran from 2017 to 2021 and reached 16,432 households in 10 Governorates across Syria. Support packages mainly included the provision of vegetable seeds, tools, seedlings and poultry, as well as livestock vaccine, beekeeping and the rehabilitation of irrigation systems.

The overall objective of the programme was to increase food availability through improved smallholder production and to build resilience and recovery of households and the agricultural sector in Syria against shocks. These objectives are theorised to be achieved through increasing the productive capacity of households in the form of direct asset transfers of agricultural inputs on one hand, and enhancing access to alternative income sources as well as irrigation technologies on the other hand.

## Time Trends

In our first set of analyses, we examine the time trends for the overall sample to describe changes that occurred in Syria between the start and the end of the programme activities. There is an overall reduction in the use of harmful coping strategies, particularly in the sale of productive assets and for children taking extra jobs to support household needs. This is a positive trend that impacted both treatment and control households alike.

Moreover, the share of households engaging in agricultural value chain activities increased at the end of the programme, particularly regarding the sales of crop and livestock produce. These overall positive changes correlated with the lower intensity of conflict events as well as with the end of a long drought period which was affecting Syria and the agriculture sector prior to 2020.

Figure 1 shows changes in the type of shocks that households faced 12 months before each wave of data collection. Exposure to crop pests and low agricultural output prices remarkably declined during the project phase. More importantly, stronger security and more rainfall benefited smallholder farmers in Syria, lifting the tide for all. The share of households who reported drought as major shock has declined significantly from baseline.

On the other hand, we find that households in Syria are increasingly facing an economic crisis with increasing input costs. We find that households still rely considerably on taking up credit to ensure adequate food consumption. Households report that prices of agricultural inputs, such as seeds, tools and agrochemicals are becoming more expensive. Although we are unable to prove this directly with the data, we posit that these challenges are linked to the hyperinflation occurring in the region caused by the financial crises in Lebanon and Syria.

## Interventions Types

In our second set of analyses, we analyze the impact of different intervention types taking into account differences between the beneficiary and non-beneficiary groups at endline only (as we have a larger sample for each intervention type). The data show that households in the beneficiary group are on average better off in regards to food security. They also rely less on harmful coping mechanisms on average. We find that these positive differences in food security mainly include households who received the vegetable kits or seedlings (see Figure 2).

Moreover, we observe that households who received livestock vaccines, poultry or beekeeping did not increase their food security as expected. We believe that this is driven by nature and timing of the interventions. Given that households who have received vegetables have more direct access to diverse and healthier food, we are likely to find a stronger effect on food security within these groups. However, in a complementary analysis, we observe that beekeeping beneficiaries showed stronger resilience against productive asset depletion to deal with shocks while beneficiaries of livestock vaccines relied less on credit to deal with food shortages.

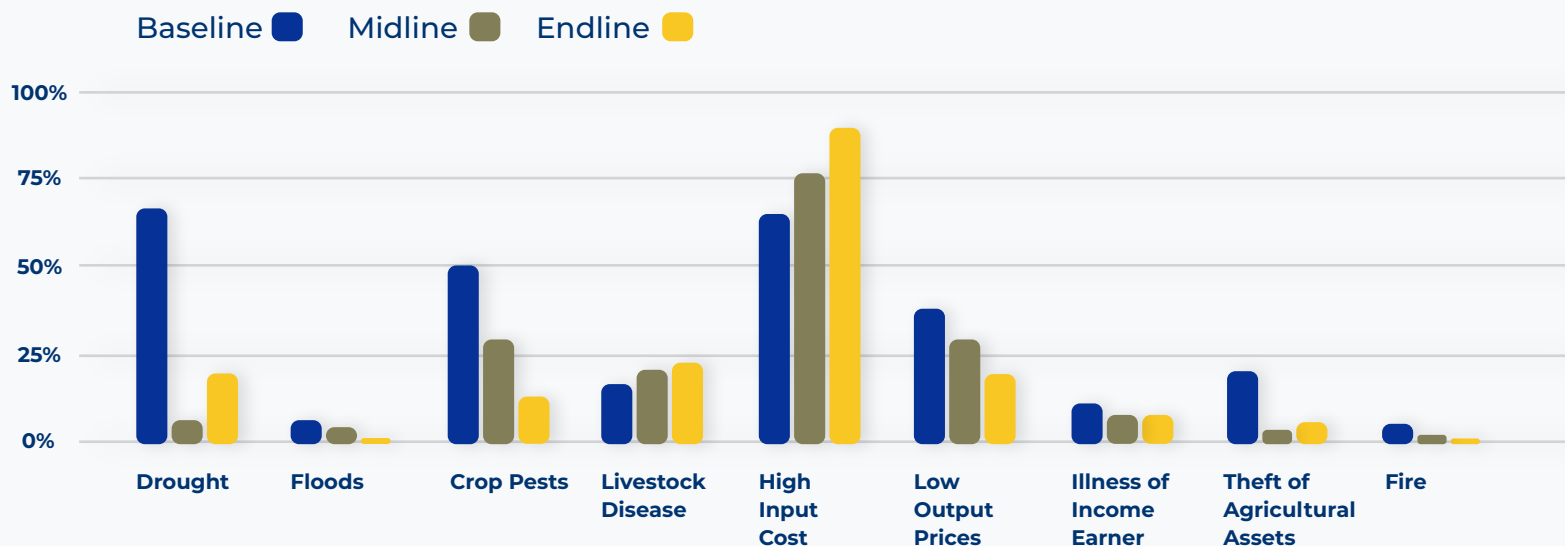


Figure 1: Changes in the type of shocks faced by households in Syria (in %). Source: own analysis

## Impact Findings

In our final set of analyses, we match and analyze the panel survey data to quantify the causal impact of FAO's programme on food security. The panel data uses a smaller sample of households who were interviewed both at baseline and endline.

While smaller samples are not desirable as such, the panel structure of the data implies that these estimates are our most rigorous calculations of causal programme impacts, methodologically speaking.

The rigorous impact evaluation analysis has four main findings:

- The FAO programme causally and significantly strengthens the food security of vulnerable smallholders in Syria by 13% from baseline values, which is particularly evident for households who received support in vegetable production.

- Female-headed households benefited considerably from the programme increasing their food security status by 32% compared to female-headed households who did not receive support.

Examining the specific intervention types, we find that the overall impact on food security is driven by the provision of vegetable kits and seedlings. We find no significant impact for poultry, beekeeping and livestock vaccination.

There is notable evidence on the positive impacts on harvests and yields, particularly for vegetable crops, such as tomatoes and cucumber.

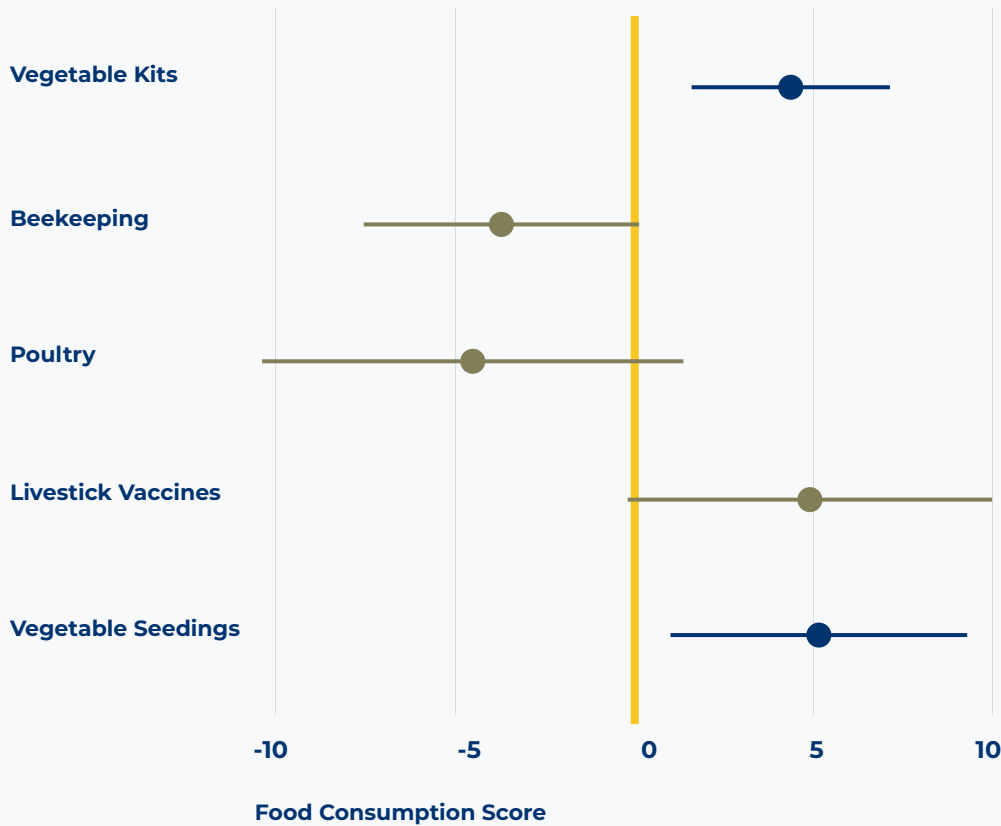


Figure 2: Positive impact of vegetable kits and seedlings on food security. Source: own analysis

## Implications

Working in a challenging environment as in Syria calls for ensuring that households are able to cope with recurring shocks without the need to rely on irreversible negative coping mechanisms. To increase long-term adaptive capacity, we recommend the provision of reliable access to social safety nets, productive agricultural and livestock assets, functional markets and value chains and irrigation.

The FAO interventions in our study were spread widely across diverse regions and beneficiaries, resulting in only marginal benefits per beneficiary household and village. Such an approach may fail to unlock agricultural potential if constraints are multi-dimensional.

For example, households may need seeds and adequate irrigation to produce effectively.

We recommend to FAO that multiple intervention components are targeted to similar households to increase overall impact and its sustainability in the long-term. This is also closely related to beneficiary selection. We recommend FAO as well as other international and local stakeholders to better fine-tune their beneficiary selection criteria. We particularly encourage that future support continues to be targeted at female-headed households who benefited directly from the programme both immediately after receiving support and two years on.

and global context of extreme macro-economic uncertainty and in the midst of a pandemic. Should the weather fail, insecurity escalate or geopolitics impose further social and economic constraints, then receiving some support with production will become a critical determinant of survival once more.

Our analysis revealed the critical role of credit to support the rural Syrian economy. While inputs and outputs exist and can be traded, working and living on credit creates dependency and vulnerability, which will reduce resilience and inhibit the growth of the rural economy. It may prove instructive to consider the simultaneous provision of inputs in kind, vouchers and cash and analyse the impacts of such different intervention modalities.

Every additional study is a critical puzzle piece helping to build the knowledge on how to design more effective interventions for people most in need of support.

## **A Concluding Methodological Note**

Conducting an impact evaluation which requires panel survey data in a complex and challenging environment is an achievement in itself. The M&E team of FAO Syria worked tirelessly to reach most of the households who had been interviewed at baseline and were able to follow up with them.

There were changes in the identified target beneficiary villages and households due to post-baseline context analysis recommendation conducted by FAO and, hence, in the sample. This somewhat limited the extent of the analysis feasible.

The main lesson learnt on this issue is that relatively small efforts in rigorous learning can yield significant insights. Such insights are urgently needed in the humanitarian community working to establish food security and resilience in conflict-affected settings around the world.

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