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Evaluating farmer priorities and readiness to adopt new water, energy, and agricultural solutions in Lebanon

As Lebanon faces compound challenges including a pandemic, economic, financial and political failure, a looming food security crisis is rapidly approaching. Much of this crisis could be attributed to the lack of long-term planning and investment in the sustainability of the agricultural sector. Another challenge lies in the existing disconnect between decision making between the agricultural sector, and other interconnected sectors, including water, energy, health, economy, among others.

This is exacerbated by the lack of integrative national tools that allow for quantifying the trade-offs associated with possible plans and interventions, which could play a role in facilitating a dialogue between multiple sectors and stakeholder groups. Supported by the Food and Agriculture Organization of the United Nations, the Faculty of Agriculture and Food Sciences at the American University of Beirut has worked toward evaluating stakeholder perceptions toward existing resource challenges and willingness to implement proposed interventions at the farm scale.

Key messages

- The survey highlights the interconnections between farmers' decisions on their lands with different resource systems including energy, water, health and the economy.

- It is important to develop incentives that are consistent with farmers' preferences and willingness to shift to different practices on their farms.

- Farmers are most likely to shift to alternative energy sources, followed by growing different crops, then using alternative irrigations sources.

- Improving profits and saving water and energy are the top reasons indicated by farmers for making shifts in their practices.

Survey with Bekaa Valley farmers

In an effort to learn about farmers' willingness to shift to different crops, alternative water sources, and alternative energy sources, we conducted an in-person survey with 200 farmers in the Bekaa Valley. We were also interested to learn about farmers' priorities to minimize water, energy, land, emissions, cost, and maximize nutritional value, as they made those decisions.

- The average land size of the surveyed farmers was 5.8 ha.

- 38.5 percent of the farmers reported their main income being from agriculture.

- Land ownership: 57 percent owned and invested, 37 percent owned by farmer, 3.5 percent invested.

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Rank the decisions you are most likely to make for your farm

1 Use alternative energy sources

In an effort to

- Improve profit;
- save water;
- reduce emissions.

2 Grow different crops

In an effort to

- Improve profit;
- save energy;
- save land;
- save water;
- reduce emissions;
- improve nutritional value.

3 Use alternative irrigation sources

In an effort to

- Improve profit;
- save energy;
- save underground water;
- reduce emissions.

Moving forward: challenges to address

➤ Understanding the preferences and perspectives of the broader group of cross-sectoral stakeholder groups would allow for a better evaluation of possible interventions.

➤ Integrative agricultural strategies need to account for barriers to implementation which might results from existing farmer preferences.

➤ Further study and analysis of existing incentive structures and their impact on current farmer preferences.

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