MIND THE GAP “Improving Dissemination Strategies to Increase Technology Adoption by Smallholders”

Project Lessons Learned, Political Recommendations, and Strategic Actions

Project Background
Proven agricultural technologies that can improve living conditions often have low adoption rates because of the lack of effective extension systems and an enabling policy environment. However, little is known about which extension approaches are the most effective with smallholder farmers. The project “Mind the Gap” provides an analytical view and offers an effective option on the opportunities and challenges facing initiatives to increase the impact of rural and agricultural extension services in Tunisia’s drylands.

Objectives of the Project
The project “Mind the Gap” aims to (i) improve the technologies transfer strategies to increase technology adoption by smallholders’ farmers in the Tunisian semi-arid areas and (ii) to understand which extension approaches the greatest success rate have, leading to help improving future agricultural technology dissemination efforts.

Methodological Research Approach of the Project
This project compared different extension approaches and evaluated their impacts on the adoption rates of two promising technologies (Kounouz barley variety and feed blocks) using the Randomized Controlled Trials (RCT) approach. The RCT approach compares randomly selected groups that receive (“treatment”) with those that do not receive (“control”) the extension approaches that are being tested. Different treatment groups receive different types of extension approaches (Table 1). These groups are compared with each other and against the control group receiving no treatment. The RCT approach assesses the extent to which the expected impacts are achieved.

Table 1: Distribution of project households (HH) according to the selected treatment groups in 2018

<table>
<thead>
<tr>
<th>T1 (N=140)</th>
<th>T2 (N=140)</th>
<th>T3 (N=140)</th>
<th>T4 (N=140)</th>
<th>Control (N=140)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical training</td>
<td>Technical training</td>
<td>Technical training</td>
<td>Technical training</td>
<td>None</td>
</tr>
<tr>
<td>Economic/organizational training</td>
<td>Economic/organizational training</td>
<td>Female empowerment</td>
<td>Female empowerment</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own elaboration from project data (2019).

Results and Lessons Learned from the Project: The role of technology transfer approaches based on the cost of adoption

- The participation rate of farmers involved in the project in the various trainings has a direct impact on the adoption rate of Kounouz variety in the studied areas.
- The RCT method proposed by the project allows the Government to choose, according to its budgetary resources and according to the type of the implemented training, the adoption degree of the desired technology. In this sense, the project offers four (4) potential options for the adoption of the Kounouz barley variety:
  - An adoption rate of Kounouz for T3 in 2018 of 35% with a total training cost estimated at 918.1 TND per person,
  - An adoption rate of Kounouz for T4 in 2018 of 24.5% with a total training cost estimated at 540.6 TND per person.
  - An adoption rate of Kounouz for T1 in 2018 of 22.6% with a total training cost estimated at 229.3 TND per person.
  - An adoption rate of Kounouz for T2 in 2018 of 13.9% with a total training cost estimated at 607.0 TND per person.
- Treatment groups that have received training in empowering women have the highest Kounouz variety adoption rates in 2018.
The involvement of women in the project has a positive influence on the adoption of innovative technologies, in particular in areas where men are generally absent (working outside the area).

The project revealed that field visit both farmer to farmers and to research station where Kounouz was grown under the full technological package (with an average moderate cost), conducted in similar production areas, is more preferable than training (with a considered high cost) and text message (very low cost). However, these extension methods are complementary and encourage farmers participants to adopt the innovative technologies implemented by the project.

The project revealed a lack of financial and human resources relating to the public agricultural extension system.

The project revealed financial and administrative constraints on the creation of an SMSA although the high interest demonstrated by the farmers participating in the economic and organizational trainings.

For food block technology, the effect of training on adoption rates was very low (1.45% for T4 to 4.37% for T1).

The project has shown that adoption of technology is a non-linear process, complex and influenced by several socio-cultural, economic, institutional, and environmental factors.

The project shows that effectiveness of a training program depends not only on the number of farmers who received information, but also on the success of this approach and / or methods used to influence farmers’ decision to adopt a specified technology.

Women participating in T4 treatment contributes more to decisions related to the expenditure of income generated by livestock activities, potentially due to increased knowledge (more confident in their contributions).

The highest adoption rate observed concerned extensi

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