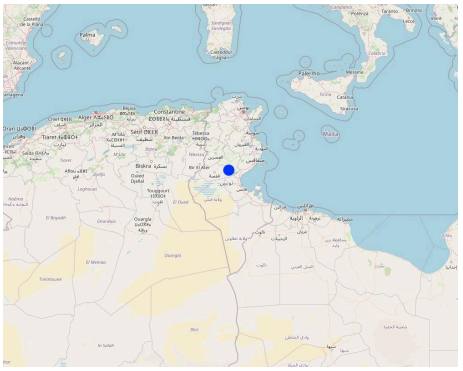
Women after the female empowerment training within the Mind the Gap project (ICARDA)

Lessons learned from the "Mind the Gap" project: Improving Dissemination Strategies ( )

The “Mind the Gap” project researched the adoption gap between agricultural research and women and men farmers. Its objective was to determine most effective and cost-efficient technology transfer strategies and give recommendations to national extension institutes and development partners to adapt their scaling strategy

Research into innovative agricultural technologies for the livestock-barley system in semi-arid Tunisia has yielded success. However, adoption of these has remained low for decades, not only in Tunisia but across developing countries (Noltze et al. 2012; DFID 2014; Syngenta Foundation 2015). Bridging this 'adoption gap' has proved to be a challenge, and there has been limited emphasis on improving agricultural extension methods. In this context, the International Center for Agricultural Research in Dry Areas (ICARDA) together with partners set up the "Mind the Gap" project, funded by the BMZ and GIZ.
This project aimed to fill this gap by developing and testing new models for transferring sustainable technology packages to smallholder farmers. Four transfer models were implemented across four test groups:
T1: Technical training and SMS.
T2: Technical training, SMS, economic, and organizational training.
T3: Technical training, SMS, economic and organizational training, with a focus on female empowerment.
T4: Technical training, SMS, and female empowerment.

The transferring models are thus (a) Technical training and SMS; (b) Economic training; (c) Organization training; (d) Female empowerment.
Technical training and SMS involved sending weekly text messages containing technical and organizational information to 560 farmer households from August 2017. Workshops were conducted in 2017 and 2018 to develop these messages in collaboration with regional extension services and other stakeholders.
Economic training included one-day sessions in 2017 to demonstrate the economic benefits of innovations. In 2018, a Farmer Business School (FBS) approach was adopted to enhance farmers' entrepreneurial skills, with a tailored curriculum and seven five-day courses delivered to 280 farmer households.
The organizational training aimed to enhance farmers' understanding cooperative management. Through classroom sessions and visits to existing cooperatives, farmers received insights into cooperative creation, management challenges, and the benefits of collective action.
Female empowerment activities engaged women from 280 farmer households, focusing on visits to female cooperatives and sensitization events to encourage their participation in agricultural activities and access to credit.



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The adoption of two innovations was evaluated through this methodology. The first innovation, "Kounouz," is an improved barley variety designed to better withstand drought conditions. The second innovation involves feedblocks, also known as nutrient-dense pellets, which serve as an alternative livestock feed made from by-products.

The project rigorously evaluated these transfer models through randomized controlled trials, focusing on their impact on innovation adoption rates and cost-efficiency. The combined approach, carried out under T3, showed the highest adoption rates, particularly among female-headed households. Field visits were identified as a significant contributor to technology adoption, while SMS proved most cost-effective.
Most importantly, it showed that the four transferring models should be used in combination for the highest adoption.
In conclusion, the research underscores that addressing the 'adoption gap' in agricultural innovation requires comprehensive approaches encompassing technical, economic, organizational, and gender empowerment training. By combining these elements significant strides can be made in cost-efficiently enhancing technology adoption rates among smallholder farmers, offering valuable insights for agricultural extension efforts not only in Tunisia but also across the MENA region and potentially beyond.

Acknowledgement:
We would like to thank BMZ/ GIZ who supported this innovative research through their contributions to the “Mind the Gap” project as well as Tunisian NARES (INRAT, AVFA, OEP, CRDA) for co-implementing project activities.

Indicators		Treatment groups					
		T1	T2	T3	T4	Control	Total
Number of households		140	140	140	140	140	700
Transfering models	Technical training and SMS	x	x	x	x		
	Economic training		x	x			
	Organizational training		x	x			
	Female training			x	x		
Households adopting technology	Kounouz barley adopters in 2017	67	69	86	54	16	292
	Kounouz barley adopters in 2018	31	19	46	32	10	138
	Feed block adopters in 2018	6	2	4	2	0	14

Results of adoption per treatment group (ICARDA)

A road map drawn during a training within the project. (ICARDA)

To better understand the adoption gap of new sustainable farming technologies, and discover cost-efficient and effective approaches to improve adoption of these technologies.

- : Access to financial resources allowed purchase of technologies (Kounouz seeds or feed blocks)
- : The right institutions were selected (OEP, INRAT, AVFA) to implement MtG project activities
- / : Collaboration between the partners (NARES) was good and important; eg INRAT multiplied Kounouz seeds ; OEP and CRDA distributed Kounouz seeds and AVFA trained farmers on Kounouz production
- SLM : Technical support to practice the technology (eg feed block composition) is important and was guaranteed by OEP

- / / : Participation of women at trainings was sometimes low (no availability to due household tasks)
- : Feed block production has strict regulations
- ( ) : Prices of substitute feed like subsidized wheat bran and barley hinder the adoption of feed blocks.
- : Workload for feedblock production is high and manpower not always available.

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/	No communities but individual farmers	Inviting farmers to trainings, Organization of baseline and follow up survey with OEP
/	AVFA (National Agricultural Training and Extension Service) CTV (Local Extension Service) OEP (Livestock and Pasture Office)	AVFA: Organizational and economic trainings (FBS, BUS, cooperatives, etc) to 280 HH Organized logistics (transport, restoration, training room) OEP: Technical training on feed blocks to 560 HH Distribution of inputs to CTV, selection of cooperatives.
	University of Goettingen INRAT (National Agricultural Research Institute)	University of Goettingen: Project development, PhD students, data collection for baseline and follow up survey INRAT: Development of new barley variety (Kounouz) in collaboration with ICARDA Technical training on barley with OEP to 560 HH
	ICARDA GIZ	ICARDA: Overall technical and administrative coordination GIZ: Trained AVFA trainers on FBS and BUS

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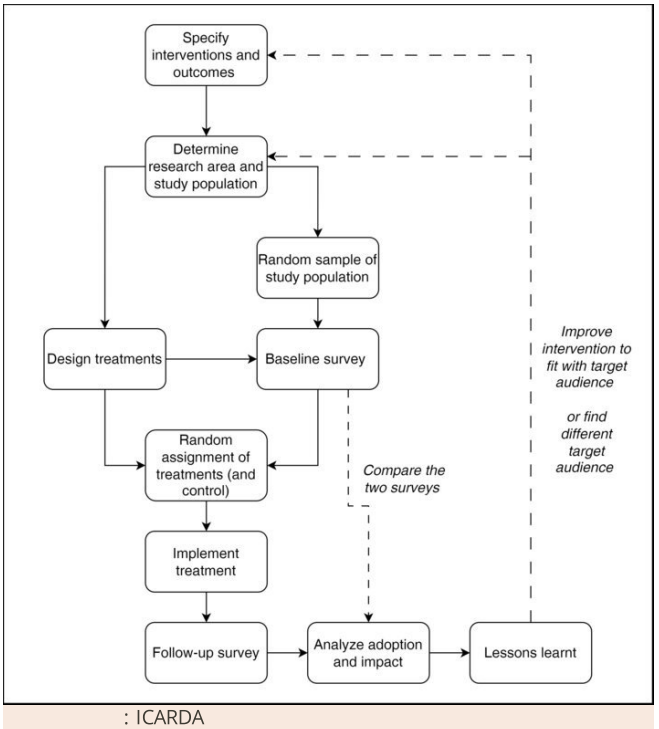
The experiments were designed and set up by the research agency.
Methodology was also determined by the research agency.
The approach to dissemination that proved successful was interactive.
The experiment was monitored by the research agency.

Flows of the applied Randomized Control Test



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The four main trainings were given:
-Technical with SMS
-Economic (e.g., better farm management)
-Organizational (e.g., setting up farmer cooperatives)
-Female empowerment

Advice was given through the training which included both on-site (e.g., demonstration fields) and meetings

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Training sessions regarding cooperation can be organized.

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Four treatment groups were made based on different combinations of training, they were evaluated for their adoption of Kounouz barley and feed blocks.

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Several research papers were published with authors from different partners.

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10,000-100,000
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GIZ/BMZ

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- Highest adoption rate for Kounouz was in T3 (61% in 2017 and 33% in 2018) where the whole package of extension was provided (technical training, SMS + economic and organizational training +female empowerment + access to input). This indicates that different adoption models should be combined rather than singled out.
- The treatment groups T3 and T4 which received the female empowerment training have the highest Kounouz variety adoption rates in 2018 (T3 = 33%, T4 =24%). The implication of women in the project has a positive influence on the adoption of innovative technologies. The gender dimension should be considered as a vector of adoption of new technologies especially in Tunisian agriculture.
- In terms of cost, the government can choose according to the available budgetary resources:
  i) Highest level of technology adoption with the highest cost of trainings 34% in T3 with a total cost of trainings estimated at 900 TND per person
  ii) Medium technology adoption rate with a lower cost of trainings 22% in T1 with a total cost of trainings estimated to 230 TND per person).

  T3 is most effective but T1 is more cost efficient.
- The strong collaboration between four public research and extension institutions (OEP, INRAT, AVFA and CTV) and one international agricultural institution (ICARDA) is one of the important factors for adoption and transfer of knowledge
- Concerning the technical extension methods, the field visit (with an intermediate cost) especially done in the similar areas is more efficient than the training (with a high cost) and the SMS text message (with a very low cost). However, these extension methods are complementary and encourage the project's farmers to adopt innovative technologies.

Editors

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Udo Rudiger - Innovation specialist
Dina Najjar - Gender specialist
Boubaker Dhehibi - Natural Resource Economist
Jutta Werner - None
Sondos Derbel - None

https://qcat.wocat.net/km/wocat/approaches/view/approaches_7123/

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Technologies: Small-Scale Nutrient-Dense Pellet Production https://qcat.wocat.net/km/wocat/technologies/view/technologies_6486/
Technologies: ICT2Scale – supporting smallholder farmers with cellphone-based services via SMS https://qcat.wocat.net/km/wocat/technologies/view/technologies_7002/

- International Center for Agricultural Research in the Dry Areas (ICARDA) -

- ICARDA Institutional Knowledge Management Initiative

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