Progress Report	**BMZ Small Grants**

General Information

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Closing date	End of February 2020
Reporting period	April 10, 2019 – December 31, 2019
Submit by e-mail to	beaf@giz.de

Notes on completing the entry form:

When completing the template, please follow the guide questions in italics, which can be overwritten.

Characters should be font size 11 in Arial. Please do not change the format nor submit a pdf.

Progress reports should not exceed 5 pages. Detailed research reports should be added in the form of annexes.

General direction:

If the period between the last progress report and the final report is less than 3 months, the last progress report can be omitted.

1. Basic data

The IARC applicant	ICARDA
Project title	ICT2Scale – access to e-learning and cell-phone based services to strengthen extension services for smallholder farmers in Tunisia
Funding type, GIZ Project Number and Contract Number	Small grant, GIZ project number: 17.7860.4-001.00 Contract number: 81236141 000.00
Reporting Period	April 10, 2019 – December 31, 2019
Project Coordinator and Project Scientists	Mr. Udo Ruediger (coordinator), Tunis, Tunisia +216 26329553 u.rudiger@cgiar.org Dr. Mounir Louhaichi, Mr. Bastian Mueller, Dr. Boubaker Dhehibi
Project Partners	L'Agence de la Vulgarisation et de la Formation Agricoles (AVFA): Ahlem Ben Amor

2. Progress Report

State of Project Implementation

Output 1: Farmers (women and men) receive and request relevant information to improve dryland farming practices and farm management

Activity	State of implementation
1.1 Conduct a short survey about the information requested by smallholder farmers	Completed
1.2 Set up the USSD / IVR application necessary to provide farmers with market information and possibly also with weather data	Completed
1.3 Collect input market prices and weather data on a weekly basis, enter data and make it available at service provider	Ongoing
1.4 Inform farmers and their organization about USSD / IVR application	Ongoing
1.5 Select new CTV and formulate new technical SMS messages concerning dry land farming and farm management	Completed

Output 2: Tunisian extension and training services are involved in e-learning module development and extension service trainers are trained by e-learning in gender-relevant extension approaches, appropriate didactics, dryland farming, and ICT enabled extension approaches

Activity	State of implementation
2.1 Assess training needs, analyze if existing courses can be recommended and develop e-learning training modules on gender, didactics and dryland farming. Assure translation into French language.	Ongoing
2.2 Manage the e-learning platform, assure monitoring & evaluation through log files, quizzes and surveys (knowledge before and after the e-learning). Assure certification for participants	Not yet, start in 03/2020

Output 3: Scientific analysis of the uptake, use and impact of the provided information by farmers and recommendations for scaling up of the ICT enabled extension services

Activity	State of implementation
3.1 Conduct a baseline farmer survey on use of SMS / SMS on demand/Radio (sex disaggregated)	Completed
3.2 Conduct a follow-up survey on use of SMS / SMS on demand/ Radio (sex disaggregated) and on changes in their current practices and behavior due to the ICT tools (baseline is existing through Mind the Gap project)	In 2021
3.3 Conduct a survey with extension workers on use of e-learning (sex disaggregated)	In 2021
3.4 Develop recommendations on use of ICT-enabled extension services or national extension services	In 2021
3.5 Develop sustainable business cases (in collaboration with GIZ)	Ongoing
3.6 Present scientific results in research papers and conferences	In 2021

General Achievements and Problems encountered

Inception workshop

A two-day inception workshop took place in Hammamet, Tunisia on April 29-30, 2019. Thirty-six participants from the public and private sector participated: 4 from National Institute for Agronomy in Tunisia (INRAT), 5 from International Center for Agricultural Research in Dry Areas (ICARDA), 6 from different technical centers; 1 from GIZ, 2 consultants, 3 from farmer cooperatives, 4 from Office for Pasture and Livestock (OEP), 5 from Regional Commissariat for Agricultural Development (CTV/CRDA); 2 from IT company (NG Trend), 2 from National Agricultural Training and Extension Agency (AVFA), and 2 from national farmer syndicate (UTAP).

The first day of the workshop was dedicated to the general introduction of the project, its objectives, activities, and areas of intervention. One ICARDA CIM-IF (communication specialist) presented the e-learning component of the project by demonstrating the use of already existing e-learning modules on the ICARDA website and the idea of developing further modules by Tunisian extension staff. The IT company NG Trend presented the "short number" model which is being used in the project for farmers to have access to market prices. Two consultants showed the survey results on the information which project farmers are requesting to receive per SMS. The second day of the workshop concerned the development of the technical SMS messages to be sent to farmers. According to the results of the survey and the expressed demands from farmers, the participants were divided into six thematic groups to develop the messages. Invited

participants were specialists of certain domains and could therefore contribute to the development of high value technical messages useful for farmers.

Component 1: Sending technical SMS to farmers
The ICT2Scale project is a follow-up project from the large BMZ grant "Mind the Gap" project, which used SMS as an extension method on a pilot basis. 560 farmer households had received technical messages on barley and animal feed. A survey conducted by the "Mind the Gap" project showed that farmers appreciated the SMS but requested a wider range of information (other commodities) as well as market prices.

The ICT2Scale project has taken up this demand-driven request and formulated, during the inception workshop, messages on the following agricultural areas: i) Cereals, ii) Forages, iii) Livestock, iv) Olives and fruit trees, v) vegetables and vi) bee keeping (honey). For each category, between 10 to 16 messages were formulated in Arabic and French. Frequency, concerned area, and appropriate time for sending the messages were determined. As ICARDA is also involved in a "conservation agriculture" project, "conservation agriculture" messages were formulated in the "cereal" working group.

SMS messages like "Recommended" seed rate for Sorghum is 30 kg/ha and for Alfalfa is 25 kg/ha" were shared with the regional extension agents (CTV) of the Regional Commissariat for Agricultural Development (CRDA). The CTV agents of five different delegations are in charge of sending all the SMS message to selected farmers. A short survey was carried out in the delegations to find out who requests messages and for which commodity / product, so that farmers receive only messages that are useful to them. The recipient smallholder farmers are beneficiaries of the "Mind the Gap" project as well as new participants from the same region. The CTV agents are sending messages to about 700 farmers.

The project also collaborates with the GIZ PAD project, which supports 'honey" as one of their target commodity value chains. A well-organized farmer cooperative called Apiservice in the north-western part of Tunisia (Fernane, Jendouba) with about 300 members is interested in sending "honey production SMS messages" to their members. Their technicians and AVFA "honey-trainers" elaborated 14 messages which have been sent since June 2019.

The project supported the purchase of SMS units from a national provider (Tunisie SMS). In the first round, 60,000 SMS were bought at a price of about 0.01 $ per SMS. Table 1 shows the number of beneficiaries receiving SMS by delegations (regions) and commodity value chains.

Table 1: Number of farmers receiving SMS messages per delegation and commodity

	Saouaf	Zriba	Nadhour	Sbhika	Total
Pomegranates	0	0	0	21	21
Olives	25	37	56	166	284
Apricots	0	0	0	45	45
Tomatoes	5	0	28	45	78
Chilli peppers	5	0	0	49	54
Potatoes	5	0	11	17	33
Peas	5	0	0	78	83
Forages	5	5	21	23	54
Cereals	21	31	60	67	179
Ruminants	38	38	52	32	160
Green house	0	0	0	48	48
Citrus	0	0	8	14	22
Melon	0	0	13	0	13
TOTAL[1]	100	50	100	250	500

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[1] The total number is less than the sum per delegation as some farmers receive messages of different commodities.

The total number of farmers receiving messages was about 1000. For 500 farmers from the listed four delegations plus 200 from Ouslatia details per commodity are not available. In addition, the "honey" cooperative in Jendouba sent technical SMS messages to about 300 members. The highest demand for technical information was related to olives, cereal, honey, and ruminant value chains.

A total of 101 messages have been developed during the inception workshop and are being sent on weekly basis till end of 2020 (Table2).

Table 2: Number of technical messages per commodity value chain

Commodity	olives	citrus	vegetable	cereals	Forages	Ruminants	honey	TOTAL
Number of SMS	14	10	16	19	9	19	14	101

Component 2: Market price information via mobile phone
One of the requests from farmers in the project region was to receive market prices for different agricultural commodities and inputs. This information will allow farmers to compare prices of different local markets in their region and select the one with the best prices to increase their income. At the same time, the provided information increases their negotiation power with potential intermediate "middlemen" who usually purchase products on their farm.

The above-mentioned survey identified the commodities for which farmers in Zaghouan and Kairouan departments demand prices. One of them is straw and hay, which are very important for livestock farmers in the region as this supplementary feed is purchased in large quantities during periods of feed shortages (summer and winter). These prices are fluctuating a lot throughout the year.

Beside feed, commodity prices of olives, apricots, and some legumes are also collected. Mineral fertilizers like Ammonium Nitrate and DAP, which are sold by retailers in the souk, are also in the list of the 10 most requested commodities. Besides the price, the farmer also receive information on the availability of the commodity on the specific market. This will help to save time and costs for transport.

The prices of the commodities are collected by the CTV extension staff of the five delegations Saouaf, Zriba, Nadhour, Sbikha, and Ouslatia. They visit the weekly market (souk) where the commodities are sold, entered, and sent (price range) to a platform provided by the IT company NG Trend. Farmers can access the prices using their mobile phone by sending an SMS with the short number "85270".

The project has trained the CTV staff in the use of the NG Trend platform and pays the annual fee of the "short number" which works with all three national phone companies. A flyer with the short number and the different commodities was developed in Arabic and French (recto-verso) to guarantee a successful outscaling of the information on access to market prices through this short number. As the number of users (farmers and traders) is still limited (about 100-150 per month) more farmer meetings will be organized in 2020 to promote the use of the number. Broadcasting through local radio will be organized in collaboration with the national partner AVFA.

Component 3: E- learning modules
Using e-learning modules to strengthen capacity of extension staff is an effective and very cost-efficient way as no teacher and no transport is needed. It is therefore a recommended training method in particular for resource-poor institutions to keep their staff up-to-date. During the inception workshop, the three e-learning modules to be developed were discussed with major stakeholders (training and extension institutions). Sub-modules and responsible persons and institutions were identified and are presented in Table 3.

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Table 3: Developed E-learning Modules

e-learning module	Sub-Module	Module developers (institution and person)
Gender	Female entrepreneurial	-AVFA Najla Ammroui, -ICARDA, Dina Najjar
	Honey as an income generating opportunity	
Didactics	Andragogie	-AVFA, Ezzedine Khemiri -ICARDA, Udo Rudiger
	How to develop a Power Point Presentation	
Agriculture in Dry Areas	Precision Irrigation	-INRAT, Hajer Ben Ghanem
	Cactus production	-ICARDA, Mounir Louhaichi

The content of the modules is developed by AVFA, ICARDA and INRAT specialists. Animation of the modules is done by an AVFA expert before it is sent to ICARDA's e-learning expert (CIM-IF) in Amman. The modules will be accessible under: https://elearning.icarda.org/

At present, most modules are online and being tested and reviewed. Summary fact sheets need to be elaborated before the final training modules can go online.

IDO Contribution

i) The inception workshop was attended by 36 participants from different national institutions. During the workshop they learned about the importance of e-learning, technical SMS, and price collection via mobile phone

ii) Trainings and coaching were provided to 5 CTV agents for using the NG Trend platform for price collection

iii) Table 4 shows the number of SMS received by beneficiaries, requesting price information between August and December 2019. A total of 429 prices were requested, but it cannot necessarily be concluded that one message equals one beneficiary as the same beneficiary may make several price requests.

iv) About 1000 farmers are receiving technical SMS messages (see details in Table 1 and Table 2).

Table 4: Evolution of number of SMS to request price information (Period: August-December 2019)

	August	September	October	November	December
Number of price requests per SMS	3	50	159	142	75

Conclusions for the following Reporting Period

In general, the outputs of the projects are achievable. E-learning modules will be ready latest in March 2020. A workshop with representatives of different training and extension services in Tunisia will be organized beginning of April 2020 to demonstrate e-learning modules and encourage the institutions to share and motivate their trainers and extension staff to strengthen their capacity by using the developed e-learning modules.

SMS messages have already been sent to about 1000 farmers. A mid-term evaluation will verify the use of the SMS and what other information is requested. The initial survey showed that sending weather data, as initially considered, is not necessary as all farmers have access to detailed weather forecast on TV.

Some adjustments are needed concerning the access to market prices (component 2). The experience so far has shown that the use of the mobile phone "short number" is limited (see

Table 3). The project plans to collaborate with a Start Up and the National Observatory of Agriculture (ONAGRI) to develop a smart phone application showing agricultural market prices of many products in several regions (governorates) of Tunisia. This will be done in addition to the existing "mobile phone short number". A recent survey carried out by another ICARDA project in Zaghouan showed that the percentage of households with smart phones has increased substantially over the last years. In 2019, 45 % of the HH in Zaghouan have at least one smart phone, as compared to end of 2016 where the baseline survey of the "Mind the Gap" project revealed that only 3% had smart phones. A major advantage of creating a smartphone application is that not only does it cover more products and a wider region, but it is also cheaper than requesting prices per SMS. A farmer actually pays 0.15 TD (5 cents) per SMS.

Publications, Papers and, Reports

- One blog on the ICT 2Scale project
  https://www.icarda.org/media/drywire/harnessing-ict-improve-extension-systems
- Survey on price information needs of smallholder farmers
  https://hdl.handle.net/20.500.11766/10636
- Project flyer (In English and French)
  https://hdl.handle.net/20.500.11766/10500
- Report of inception workshop
  https://mel.cgiar.org/reporting/report/id/9537/del_id/19248.

Summary

The ICT2Scale project is applying two ICT tools as innovative extension approaches, namely e-learning and mobile phone message services. The project started with a survey to identify what type of information smallholder farmers would be interested in.

During the two-day inception workshop with 36 participants from national training and extension services, major project activities were presented, discussed, and planned. The workshop was also used to develop about 100 SMS messages which are being sent to smallholder farmers in Kairouan, Zaghouan, and Jendouba. The messages support farmers in the production of different commodities like cereals, olives, citrus, honey, and livestock.

Farmers were also requesting market price information of their rural souks. The survey revealed for which agricultural input and output commodities prices are demanded. The project selected the 10 most important commodities. The regional CTV extension staff is collecting these prices on a weekly basis in their local souks (markets) and entering them onto a platform. Farmers can request the availability and price range of a selected commodity at five different local markets using their mobile phones by sending an SMS "85270". This ICT tool needs to be promoted more widely to have a larger impact. To reach more farmers and provide more information at no costs, the project will encourage and support start-ups to develop a smartphone application with different agricultural commodity market prices in different regions of Tunisia.

E-learning training modules are a cost-effective way to strengthen capacities of national training and extension staff. The project has developed three modules by experts from AVFA, INRAT and ICARDA. The modules touch topics like Gender, Didactics and Agriculture in Dry Areas. The modules will be animated and become accessible under: https://elearning.icarda.org/ by March 2020.