

## **Report on use of ICT for market information and technical messages**

**- Experiences of the ICT2Scale project in Tunisia -**

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## 1. ICT for technical agricultural extension

### 1.1 Context

Extension services in Tunisia hardly reach smallholder farmers. The literature reveals that there are about 600 extension agents at the country level (AVFA<sup>1</sup> 2017; Thabet et al. 2015). Agriculture employs 15% of the population (ILO 2013). For a population of 11 million, this means that one extension agent is responsible for approximately 2,750 farmers. A survey conducted with 700 smallholder farming households showed that less than 5% receive regular advice and information from extension services. While extension agents are physically present in remote regions through Territorial Extension Cells (CTV), their ability to reach farmers is impeded due to lack of vehicles and fuel. Findings from a recent qualitative study reveal that with the recent revolution, the ability of extension agents to visit rural areas have been limited further due to reduced budgets and stifled decision-making.

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.

### 1.2 Project intervention

The ICT2Scale project has taken up this demand-driven request and formulated, during the inception workshop, 101 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. The messages are sent on a weekly basis.

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 farmer households 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 (Fernana, Jendouba) with about 300 members is interested in sending “honey production and marketing SMS messages” to their members. Their technicians and AVFA “honey-trainers” elaborated 14 messages which have been sent since June 2019.

In total about 1000 farmers are receiving SMS. The project supported the purchase of SMS units from a national provider (Tunisie SMS). Two times 60,000 SMS were bought at a price of about 0.01 \$ per SMS.

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<sup>1</sup> AVFA = Agence de la Vulgarisation et de la Formation Agricole (Extension and Training agency)

### 1.3 Project output

In November 2020 a sample survey was carried out with 40 farmers receiving SMS to see results and impact of this IC technology. 60% of the farmers confirmed that they read the messages regularly. Over 50 % find the messages useful or very useful (see Fig 1 below). 43% claimed that they have learned something new. The top four areas in which farmers gained additional knowledge were: 1. Olive production 2. Small ruminant production 3. Cereal production 4. Bee keeping. Fig 2 shows in which agricultural domains farmers applied their gained knowledge.

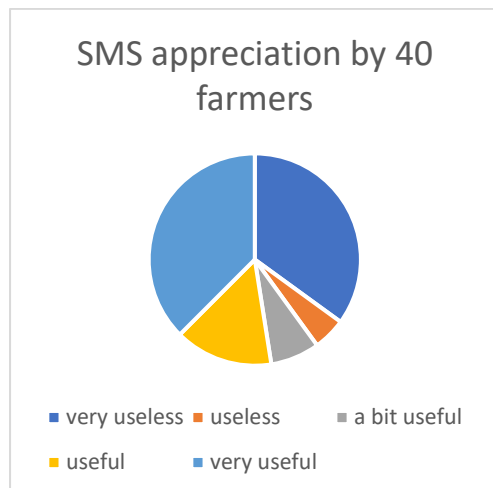


Fig 1: Appreciation of SMS by farmers

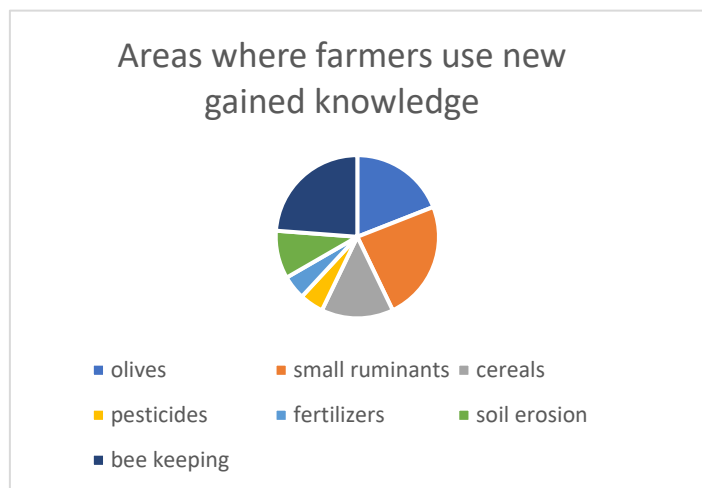


Fig 2: Areas where farmers use gained knowledge

### 1.4 Project adaptation and future intervention

The sending of technical SMS to farmers is useful and beneficial for farmers. Nevertheless, a major constraint is that mainly male farmers own mobile phones; female farmers hardly have access to these information. We therefore widen the technological approach and develop also technical radio messages which will be sent by the national radio station “Radio Tunisie”. 52 one-minute radio-spots have already been elaborated by specialists concerning the following four areas: i) Farmer associations, ii) Conservation agriculture, iii) Feed and Forages iv) Animal health. Once the spots are approved by the agricultural department DGPA , broadcasting will start on a weekly basis (every Sunday morning) for one year.

## 2. ICT for market information

### 2.1 Background and Justification

One of the requests from farmers in the Central Western region of Tunisia is 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.

## 2.2 Project intervention

A survey identified the commodities for which farmers in Zaghouan and Kairouan departments demand prices. Examples are 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 receives 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<sup>2</sup> extension staff of the five delegations Saouaf, Zriba, Nadhour, Sbikha, and Ouslatia. They visit the weekly market (souk) where the commodities are sold, enter, and send the prices (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”.



Fig 3: Screen shot of mobile phone with prices

The project has chosen this kind of USSD (Unstructured Supplementary Service Data) rather than the IVR (Interactive Voice Response) as none of the three telephone companies operating in Tunisia is providing IVR services. This is rather unfortunate as the rate of analphabets in Tunisia among rural women is still very high.

## 2.3 Project output

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. About 1000 flyers have been distributed in the concerned regions.

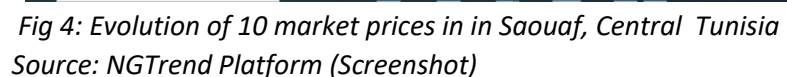
20 DIN A0 posters with the “short number” were developed, printed and posted at strategic points in the five CTV delegations. The CTV agents who send the technical SMS also sent SMS messages to farmers informing them about the “short number”. The project organized in January 2020 three regional workshops with over 100 participants (mainly small-scale farmers) to demonstrate and practice the use of the short number and explain the advantages of the tool.

During the workshops it was observed that farmers face several constraints. Many were not used in manipulating their mobile phones to send SMS messages. They use phones only for calls but not for sending SMS. Others complained about the costs involved when sending a “price request SMS”, although it costs only 0.150 TD (5 US cents). Others again didn’t quite understand or agree with the use of demanding prices in advance.

<sup>2</sup> CTV= Cellules Territoriales de Vulgarisation

Tab 1: Evolution of number of SMS to request price information in 2020

During a short sample survey questions were asked to 40 SMS recipients concerning the short number living in the same five regions of the CTV. Less than 10% knew about the existence of the short number and only one farmer has used it once to inquire about olive prices. He never used it again as he considers it useless. After explaining in theory to the 40 farmers the use of the short number, 5% found it totally useless, 90% little useful, 5% middle useful and 0% very useful. These figures confirm that lack of interest is one of the main factors for low adoption rate of this technology. Nevertheless, the need for price information has been expressed by many farmers during the final “Mind the Gap” project survey carried out end of 2018 and the 10 commodities have been selected in a participatory way during the ICT2Scale baseline survey in April 2019.



## 2.4 Project adaptation and future intervention

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### 3. Conclusion

The ICT2Scale project has introduced two Information and Communication Technologies to improve agricultural development in Western and Central Tunisia. The sending of technical advises to 1000 farmer households from regional extension services and cooperatives has proved to be appreciated by recipient farmers as it improves their knowledge and technical skills in different agricultural domains.

One challenge remains to make this SMS technology sustainable after the project intervention. Discussions have started with CRDA (regional department of Ministry of Agriculture) and AVFA. They are convinced in the efficiency of the technology, but as public funds are limited it is not sure that they will take on the charges. On the other hand, the honey - cooperative which sends messages to their 300 members will definitely continue and make their members who are interested in receiving advises pay for the service.

The USSD “short number” price technology hasn’t had the intended success and impact. Farmers are finally not very interested in this technology. The project will test if through the development of a smart phone application ICT supported price access will increase. Major advantages are that it will be simple to use, free of charge for users and it covers more commodities and the whole territory of Tunisia. The use of pictures as symbols for different commodities will also make it easier for female farmers to adopt it.