

# American Journal of Agriculture (AJA)



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farmers in Menoua Division of the West Region of  
Cameroon**

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## Use of Information and Communication Technologies by farmers in Menoua Division of the West Region of Cameroon

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### Abstract

**Purpose:** The objective of this article was to analyse the farmers' access to agricultural information by using ICTs in the case of Menoua Division of the West Region of Cameroon.

**Methodology:** The study sample was constituted of 200 farmers of at least 21 years old and 31 resource persons. The sample was constituted using the reasoned choice, the snowball and simple random techniques. The data was collected by the questionnaire and analysis of quantitative data was done by use of SPSS.20.

**Finding:** Results show that two ICTs components provide agricultural information used by farmers in agricultural basins in Menoua Division. Mobile phone, used by 189 out of 200 respondents, is the main support of agricultural information used in transactions. The computer used by 18 out of 200 respondents is also an important support for the use of ICTs. Social networks which include Whatsapp and Facebook are used by 25 out of 200 respondents. The mobile phone is mostly used by farmers to access new informations in the agricultural sector (47%) and to be informed on the prices of products on the market (23%). Social networks enable farmers to get agricultural informations from discussions with colleagues (18 of 25). Social networks are also used to access news in the agricultural sector (5 of 25). Farmers used computer to record agricultural informations. Social networks help farmers to obtain 3 types of agricultural informations: technical (73%), commercial (89%) and institutional (42.5%).

**Recommendation:** The government should inform farmers through their mobile phones by sending messages relating to seminar and holding of events such as agropastoral fairs. Also, training should be organized on the importance of using cell phones as tools of informal research via the internet by the farmers. Farmers should help each other and train together in the use of ICT for the benefit of their daily activities. The various mobile operators should also get involved in supporting farmers.

**Keywords:** *ICTs, agricultural information, farmers, mobile phone, social networks, computer, support of information, Menoua, West-Cameroon.*



## Introduction

ICTs facilitate the exchange of agricultural information between experts and farmers (Technical center for agricultural and rural cooperation [CTA], 2012). At the global level, Giovannetti quoted by Anseur (2009) mentioned that ICTs are of a particular contribution in terms of development of the rural sector and international cooperation. The use of ICTs in agriculture is gradually becoming essential. Information from related tools has suddenly become invasive in the society as a whole and in the agricultural sector in particular. In the category of ICT we find: the computer, the Internet and/or social networks and the mobile phone. This is an era of modernization of the agricultural world and respondents without distinction of sex give positive opinions about the use of computers for their agricultural activities (Rieu, 1983 cited by Soubiale, 2019). The Internet and/or social networks are positioned as "a means of breaking the isolation of farmers in certain regions far from main cities" (Anseur, 2009). The mobile phone now occupies a prominent place in the agricultural sector thanks to the progressive invasion of this sector by young people.

## Literature review

Focusing mainly on the agricultural sector, Zahedi and Zahedi (2012) note that NICTs provide farmers with technological information in the sense that ICTs call for the use of information, by entering or recording it from a digital device or a computer, then communicate the information to the populations. These authors argue that participation and informed decisionmaking in agriculture must be done by farmers who have a duty to be equipped with the ability to collect process and manipulate computer data.

Njuki *et al.* (2013) suggest that in Africa, there exist inequalities in accessing the benefits of new technologies, services and contributions in the development of countries. These authors assume that if women had the same resources as men in the practice of agriculture, they would be able to make an undeniable contribution to agricultural sector. They also specify that women could increase their cultivable area by 20 to 30% and agricultural production from 2.5 to 4%. Women could then participate in poverty reduction from 100 to 150 millions people in Africa continent (FAO, 2011 cited by Njuki *et al.*, 2013).

In agriculture, adaptation practices and the motivational sources on which the use of ICT is based change according to the sector's agricultural practices as well as the socio-demographic qualities of those practicing it agriculture (Nicaud, 1991 cited by Soubiale, 2019). Regarding the use of computers, Anseur (2009) states, "*The contribution of new information and communication technologies to farmers' access to information is based on two fundamental point; the need to collect, process and store information resulting from research and the extension and know the profiles of farmers [and the analysis of] information practices in their work context.*"

Most of the professional agricultural software that is best sold in Picardy facilitates the management of agricultural information (Lethève *et al.*, n.d.). However, these authors note that 75% of farmers who use computers create files during their work. They come to the conclusion that it is estimated at around 55%, the rate of farmers equipped with a computer in Picardy, but around 15 to 20% that of farmers using it for professional purposes with management software plot (Lethève *et al.*). According to Soubiale (2019), farmers in Aquitaine use computers to engage in an accounting exercise. Soubiale (2019) notes that in Aquitaine, the place of women remains secondary in the sense that they use computers only as a secretary and do not have the

opportunity to be farmers or to participate actively in the management of cultivable land. This author notes that more than 70% of farmers in Aquitaine have a computer at home, which they use for their agricultural activities.

In spite of the high use of computers by farmers, it is clear that the women are remarkably resistant to them. Kamruzzaman *et al.* (2013) deplore the low use of computers in the conservation of agricultural information by women in rural areas, that is to say 8% of users against 92% of them who do not benefit from its services. Women are still too closed to the solicitation of information provider which tends to be the major cause of conservation of information. An alternative to solve this problem of women may be the use of touch tablets or personal computer tablets and ultra portable personal computers which abound in rural advantages. Mersadier (2012) underlines that in addition to the facilities offered by simple mobile phones and smartphones, touch tablets allow peasant populations to view individually or in groups and store multimedia content and also have many positive experiences following the collective visualization sessions.

The existence of an interactive communication network promotes the exchange of information between farmers (Anseur, 2009) around the world. Then, farmers will be able to make their contributions in decision-making at all levels, so that their expectations are met. Social networks are less and less consulted by farmers in rural areas (Nain *et al.*, 2015). In Aquitaine, about 25% of farmers claimed to use the Internet in the daily performance of their agricultural activities (Bessi res *et al.*, 2008 cited by Soubiale, 2019). The author stresses that the proportion of farmers who have an Internet connection in their home is expressed at more than 70% and 60% use it for their agricultural work. She affirms that few are those who benefit from the services of the specific management software (33.33%) and practice for the cause of which no proportion is given. In their work entitled "Understanding Agricultural Information Networks in West Bengal, India", Haldar *et al.* (2016) have only examined the action of information communication through Internet networks for farmers in rural areas of West Bengal in India.

Another source of agricultural information is growing with the explosive entry of young people into agriculture. Information is exchanged there through "incoming and outgoing calls, SMS, voice messages, interactive voice responses, facilitated listening and web platforms." (CTA, 2012). Cell phones have even helped to visualize problems such as "plant diseases or water scarcity, or to advertise products or services." (CTA). Farmers noted that cell phones also led them to the creation of a shared audiovisual knowledge base, which can be used for learning, consulting on agricultural practices, promoting agricultural inputs, and even for expanding their social networks (CTA). Producers prefer to receive their information in the form of messages (Iwuchukwu *et al.*, 2016). Mersadier (2012) presents cell phone advantages in rural areas in Niamey in Niger. According to him, the simple cell phone allows inhabitants of rural areas, including farmers, to achieve good turnover while maintaining a certain autonomy ; to facilitate verbal and/or text communication between farmers, farmers and other peasants, in short, rural and city dwellers ; then, to carry out the loan and/or remote management of their finances while minimizing the risks of attacks which very often constitute the obstacles during the various operations of purchase and sale of products during the agricultural seasons. This author also talks about Smartphones or smart mobile phones which offer free and easy access to the internet by means of messages and internet calls, personal searches among others on search engines such as Google as well as a possibility to implement specific software applications. Then, they constitute an autonomous individual platform for both peasants and farmers in the sense that

they are now personally equipped with a camera, a still camera and a sound recorder, all of very good quality. Finally, they are an opportunity to communicate at a lower cost.

### **Methodology**

The data for this survey was collected from a sample of 200 farmers of at least 21 years and above in the agricultural production basins of Penka-Michel, Nkong-Ni and Santchou. There are 31 resource people who have been added in these three basins, as well as in Dschang, FongoTongo and Fokoué, extended to Bafoussam and Fotouni for reasons of extension of the communication network. The components of the first category reside in the Division of Menoua unlike those of the second. Reasoned choice, snowball, simple random and observation sampling techniques were used to build construct the sample and administer the questionnaires and interview guides for this study. Analysis of quantitative data was made by use of softwares such as SPSS.

### **Results and discussion**

The ICTs identified with the sample of farmers as suppliers of agriculturél information in the Menoua Division are the social networks which have two supports: the computer and the mobile phone.

#### **Computer knowledge**

In the Menoua Division, 191 out of 200, or 95.5% of respondents said they had already seen a computer. 125, or 62.5% are men and 66, or 33% are women. Their distribution according to agricultural production basin is as follows: 50 out of 50 in Bansoa-Ville, 49 out of 50 in Bafou Nord, 48 out of 50 in Balessing, 44 out of 50 in Santchou. It is quite logical that we recorded high proportion obtained. This is because of the youthfulness of respondents and the curiosity that they undoubtedly want to see and even touch a computer in this digital age. In addition, the computer has become so popular that it is very difficult to tell if you haven't seen one up close somewhere. 9 out of 200, or 4.5% of respondents said they had not yet seen a computer. That is 6 out of 50 in Santchou, 2 out of 50 in Balessing and 1 in 50 in Bafou Nord. These respondents said they had seen one before, but on television and in printed documents. However, these two avenues, which can be summed up in the possibility of having seen one but not up close or not physically, were excluded by the investigation.

#### **Possession of a computer**

In the Menoua Division, among our 191 respondents who said they had already seen a computer, 27, or 13.5% claimed to have one. It has been recorded in Santchou, 12 out of 44, in Balessing 6 out of 48, in Bansoa-ville 5 out of 50 and in Bafou -Nord 4 out of 49. Very few of respondents own a computer. Results diverge from those of Soubiale (2019) who note that more than 70% of farmers in Aquitaine have a computer at home, which they use for their agricultural activities. However, 164 out of 191, or 82% say they do not have one: 45 in each of the basins of Bafou - Nord and Bansoa-Ville, 42 out of 44 in Balessing and 32 out of 44 in Santchou. They are very numerous, those of respondents who do not have a computer. Among respondents who said they have already seen a computer, 18 out of 27, or 9% are men and 4.5% are women.

### Reasons for reluctance to own a computer

The reluctance of our respondents to acquire a computer for recording their agricultural information can be explained by several reasons as presented below.

1. **Logics of prejudices and stereotypes:** Some of our respondents believe that the computer is reserved for people who still wear uniforms for school, senior students and academics, and then offices. An interviewee in his fifties in Balessing argues: “it's not for people like us, it's for young people, the youngest”.
2. **Logics of ignorance:** There are those who believe that the computer is not yet important to them. They explain that they still have no one to use it because their children are still in primary school. They also wondered if the computer has ever become an important tool in cultivating the land. Before concluding that if this is the case, they will give the opportunity to the young farmers to train themselves to buy one for use.
3. **Logics of lack of financial means:** We have respondents who said they were not in favorable financial conditions to buy one. They kept saying: “there is no money”.

### Computer acquisition mode

In the Menoua Division, among our 27 respondents who each claimed to have a computer, 26 obtained one by purchase. None of the respondents bought their computer for agricultural purposes. They bought the computers for an educational cause, in particular for the practice and the training of the children, in short their familiarization with the computer. On the other hand, some of our respondents obtained one for their own use as a student or learner in the computer field. The only interviewee who said he had not bought his computer said he had not received it as an offer either. This man in his thirties in Santchou explained:

*My computer that I have at home, I had it 8 years ago, I think so. I use it with my children, the use it for their studies and me to keep my information about my activity that I lead, agriculture, I did not take my money out to buy it and no one gave it to me has offered. I went to my uncle's in Douala to spend my holidays. I was a student of Dschang University and was about to quit with my university studies to become a farmer for good. He asked me to throw this computer in the street because it was spoiled and no longer useful. When he when to work, I took the risk of going to a repairman and asked him to fix it. I said it to test it and he accepted. He only asked me for 15,000 FCFA which I paid him straight away, and he gave it to me 5 days later. This is how I became the owner of a computer that if I asked no one was going to have the money to buy it for me, not evens my uncle.*

### Saving job information to a Computer

Among 191 respondents who said they have already seen a computer, 18, or 9% record informations of their work in a computer. It should be noted that 17 out of the 18 who use a computer have one, against 1 respondent who uses it without having one in his possession. This means that 10 of the 27 of respondents who have a computer at their disposal do not use it for agricultural purposes. The users were distributed as follows : 6 out of 18 in Santchou including 5 use it regularly, 5 out of 18 in Balessing with 3 regular users, 4 out of 18 in Bafou- Nord who use it often and 3 out of 18 in Bansoa-Ville with a regular user. These results corroborate those of a few authors. Concluding their work in Picardy, Lethève *et al.* (n.d.) noted that an estimate between 15 and 20% of farmers own a computer and use it in their daily farming activities. The authors add that these farmers use at least one software to manage their field plots. For its part,

Soubiale (2019), noted that farmers in Aquitaine use computers to engage in an accounting exercise. In all cases, data is recorded which will be used later.

However, out of 191 respondents who said they had already seen a computer, 173, or 86.5%, did not record their work information at all. These are: 47 out of 50 in Bansoa-ville, 45 out of 50 in Bafou -Nord, 43 out of 50 in Balessing and 38 out of 50 in Santchou. Among the respondents who said they have already seen a computer, 13 out of 18, or 6.5% who record their work information on a computer, are men and 5 out of 18, or 2.5% are women. Kamruzzaman *et al.* (2013) was already indignant about the narrow use of computers in the conservation of agricultural information by women in rural areas, that is to say 8% of users against 92% of them who do not benefit from its services. These results run counter those of Soubiale (2019) because the women surveyed who say they use a computer for agricultural purposes are themselves prominent actors. However, for this author, the place of women remains secondary in the sense that they use computers only as secretaries and do not have the opportunity to be farmers worthy of the name or to participate actively in the management of cultivable land.

### **Reasons for reluctance to use computers**

The reluctance of our respondents to record their agricultural information in a computer is attributed to a few deductions. They are presented below.

1. **Pessimistic deductions:** Respondents said that they were not concerned by the recording of data from their field work in a computer. They know, they say, that they have been trained to record their data in 32-page notebooks and nothing will make the change because this is the best way to record said data.
2. **Deductions of lack of will:** There are some who do not even want to hear about it. They answered us in these terms: "I don't want" or added adding: "ask the others. I know I don't want to work with the computer".
3. **Deductions prejudices and stereotypes:** Respondents tell that the recording of data in the computer only concerns large state farms. Because they are the ones who want to modernize everything and more easily control their dense entrances and exits.

### **Access to agricultural information through the computer**

All the respondents who said they record their information in a computer, 18 out of 18 or 9% have easy access to this agricultural information when the need arises. They all provided the same explanation: time to modernize all sectors both in Cameroon and it is not the farmers of Menoua who will remain outside this new situation. In Santchou, a young married man in his thirties tells us that we are living in the digital age through computers which require the use of digital devices, including the computer. It is important, he continues, to have one and learn how to use it, to try not to be too out of step with what others are doing in other countries which are also in the midst of developing their sector. The results corroborate those of Rieu (1983) cited by Soubiale (2019) who already specified that the era in which we are in reality is that of the modernization of the agricultural universe. He also noted that the results of his study showed that his respondents, women and men, had expressed themselves in favor of the use of the computer for their agricultural activities.



### Computer perception

In the Menoua Division, while 16 out of 18, or 8% of respondents who use the computer for agricultural purposes, consider it a database, 2 out of 18, or 1% consider it a dungeon for their data. 12 out of 13 men see it as a dungeon while 4 out of 5 women do the same. The observed disparities are of two types: general and gender.

1. **The general disparity:** from this point of view, the users of the computer for the conservation of agricultural information show a perfect mastery no doubt of what they do, because the data is kept in a bank to be exploited at any time. When agricultural information is instead hidden in a computer just for the sole purpose of not exposing it to the mercy of outsiders, it becomes critical.
2. **Gender disparity:** depending on gender, we observe a perfect balance, both among men and women, in the number of our respondents who consider the computer as a dungeon. Whether it is men or women, we record one respondent.

### Social networks Internet network access

In the Menoua Division, all respondents, 200, or 100% have access to the Internet. The speed of the connection is not always what is desired and hoped for by its users but they have access to it. The respondents have access to the internet connection from recognized distributors in Cameroon such as Camtel, MTN-Cameroon, Nextell-Cameroun and Orange-Cameroon. The proportion of farmers who have an internet connection in their home in Aquitaine is expressed at over 70% (Bessières, *et al.*, 2008 cited by Soubiale, 2019).

### Internet use

Among the respondents who said they had access to the internet in the Menoua Division, only 25 out of 200, or 12.5% said they used the internet. This, despite the speed of the internet connection which evolves in a saw. A breakdown of these respondents by production basin is as follows: 17 out of 50 in Santchou, 3 out of 50 for each of the Bafou -Nord and BansaVille basins, then, 2 out of 50 for Balessing. The results are similar to those of a few researchers. According to Nain *et al.* (2015), social networks are increasingly being used by farmers in rural areas. In 2008, Bessières *et al.* cited by Soubiale (2019), noted that around 0.25% of farmers claimed to personally benefit from internet services in the daily performance of their sovereign agricultural activities. On the other hand, these results differ from those of Bessières *et al.* (2008) cited by Soubiale (2019), who point out that 60% of their respondents use social networks as part of their agricultural work. 175 out of 200, or 87.5% of our respondents who said they had access to the internet in Menoua Division, said they did not use it. Depending on the basins, note 48 out of 50 for Balessing, 47 out of 50 for each of the basins of Bafou -Nord and Bansa-Ville, then, 33 out of 50 in Santchou.

### Reasons for reluctance to use the internet

The following reasons were put forward by farmers to justify the fact that they do not use social networks to acquire agricultural information:

1. **Ignorance:** the respondents believe that asking them to use social networks for their agriculture is to want to invite them to reconnect with school. A school, they say, which is now a thing of the past and only concerns their children.



2. **Lack of time:** some feel that they are most often very busy with something else to the point where they do not have time to engage in the exercise of internet research, to complete and/or improve the quality of their work in the field.
3. **Preference:** the abundance of agricultural information providers means that depending on the ease of access, each farmer prefers one or the other over the others. In Santchou, some young interviewees told that social networks now make it possible to do without live radio, because they allow access to a certain amount of information that is broadcast there, even if it is not all. In the same vein, respondents told in other basins that it is on the Internet that the presenters of radio programs find much of their information which is transmitted to them. So it is no longer useful for them for it again. This is why they prefer, they say, to do something else and save time.

### **Operations to access agricultural information through the Internet**

In the Menoua Division, 18 out of 25 of respondents, or 9% said that their agricultural information came from the internet from discussions they held there with other farmers: 12 out of 18 in Santchou, 3 out of 18 in Bafou -Nord, 2 out of 18 in Balessing and 1 in 18 in BansoaVille. 5 out of 25 respondents or 2.5% said that they use social networks to get news in the agricultural field. They belong to the agricultural production basins of Santchou, or 3 out of 5 and Bansoa-Ville, or 2 out of 5. For 2 out of 25 of respondents, or 1%, the internet allows them to communicate with the elite to enter into possession of agricultural information. They all belong to the agricultural production basin of Santchou. These agricultural information providers stand up as "a means of breaking the isolation of farmers in certain regions far from large cities." The existence of an interactive communication network promotes the exchange of information between farmers" (Anseur, 2009) from all sides.

### **Mobile phone Possession of a cell phone**

In the Menoua Division, 183 out of 200, or 91.5% had a mobile phone against 17 out of 200, or 8.5% who do not. Thus, it was recorded that in Santchou 48 against 2 out of 50, in Bansoa-Ville 47 against 3 out of 50, in Bafou -Nord 45 against 5 out of 50 and in Balessing 43 against 7 out of 50. Apart from 2 respondents from Santchou, the rest who did not have a mobile phone during our stay in the different agricultural production basins had lost them more than 6 months ago for some, and less than 6 months for others. On the other hand, they had been damaged in the same period of time. The two from Santchou, women in their 50s, said they had been ill for a long long period of time and had been asked by health specialists to spend increasingly little time on the phone. Each of them has resolutely decided to simply part with it and used the call box as a work around.

### **Types of cell phone owned and used**

It should be noted that the fact that a respondent owns a mobile phone automatically implies that he or she uses it. However, for a respondent who does not have a cell phone in his possession, this does not automatically mean that he does not use one. Thus in the Menoua Division, the respondents have two types of cell phone. These are the simple cell phone (133 out of 183) and the Smartphone or android phone (50 out of 183). For the simple cell phone in Bansoa-Ville, 38 out of 47, in Bafou -Nord, 34 out of 45, in Balessing, 33 out of 43 and in Santchou 28 out of 48. For the android phone, we have in Santchou 20 out of 48, in Bafou Nord

11 out of 45, in Balessing 10 out of 43 and in Bansoa-Ville 9 out of 45. Since the user can be different from the owner (case of calls boxes), it is important to talk about the types of cell phone used. 143 out of 189 of respondents benefit from the services of a simple cell phone while 46 out of 189 benefit from the services of a Smartphone. The observed deviation is undoubtedly due to:

1. The lack of consideration given to social networks via the internet ;
2. The very short duration of smartphone batteries unlike that of simple mobile phones ;
3. The high costs of Smartphones on the market as opposed to those of simple mobile phones among others. The reality is that the most inexpensive simple phones are almost 5 times cheaper than the most inexpensive smartphones. Several of the respondents say that it is out of question for them to take risks in buying a brand new smartphone that costs a minimum of 20,000FCFA while in the meantime it is possible to buy a simple new phone for 4500FCFA each.

Either type has, among other things, a few common features that make up the functionality of the phone: dual chip, multimedia memory card, sound recorder, audio player, video recorder and player, camera, still camera, stopwatch, radio, earpiece, torch, calendar, alarm clock, calculator, bluetooth, a clock, games, etc. It is in this sense that Mersadier (2012), who advocated the use of basic mobile phones and smartphones in rural areas in Niamey in Niger noted that androids offer residents of rural areas including farmers an individual autonomous platform for both peasants and farmers in the sense that they are now personally equipped with a camera, a still camera and a sound recorder, all of very good quality.

### Using a cell phone

In the Menoua Division, 189 out of 200 respondents, or 94.5% use a cell phone. Among these users, 183 had a cell phone while 5 do not. Depending on the agricultural production basins, we have 49 for each of the 3 basins below: Bafou -Nord, Bansoa-ville and Santchou, then, 42 for Balessing. For the respondents, 11 out of 200 of them said they are not mobile phoneusers at all, that is 8 Balessing and one for the rest of basins. The frequency of use is twofold. Thus, 157 out of 189, or 78.5% of our respondents are regular mobile phone users including 113 for the simple mobile phone and 44 for the android. We have 45 in Santchou, 40 in Bansoa-Ville, 39 in Bafou -Nord and 33 in Balessing. Those who use it often are 32 out of 189, or 17%, with 30 for the simple cell phone and 2 for the android. Androids, however, have advantages that simple phones do not: Whasapp, Facebook, Messenger, Skype, Imo, Google, reader of Word documents, reader of PDF documents, among others. This is what Mersadier (2012) points out for whom androids offer farmers free and easy access to the Internet by means of messages and internet calls, personal searches, among others on search engines such as Google as well as a possibility of implementing specific software applications.

### Most used phone operator by farmers

The respondents face a series of mobile phone operators on a daily basis from which they benefit from their services. The table below shows the numbers and proportions of the mobile phone operator most used by our respondents.

**Table 1: Distribution of respondents according to the most requested phone operator**

| Phone operators | Workforce | Percentages |
|-----------------|-----------|-------------|
|-----------------|-----------|-------------|

|                   |            |             |
|-------------------|------------|-------------|
| CAMTEL            | 1          | 0.5         |
| MTN –Cameroon     | 155        | 77.5        |
| ORANGE -Cameroon  | 8          | 4.0         |
| NEXTELL -Cameroon | 25         | 12.5        |
| <b>Total</b>      | <b>189</b> | <b>94.5</b> |

This table 1 shows that 77.5% of respondents use a mobile phone with an MTN chip, while CAMTEL is the least used (0.5%). The disparities observed are due to the fact that the mobile telephone operator MTN-Cameroon is perhaps the most extensive network, the most helpful and even the leading mobile operator in Cameroon. The latest mobile operator in Cameroon is NEXTELL-Cameroon, which is struggling to establish itself among the rural population. ORANGE-Cameroon, whose services are undoubtedly booming in Cameroon, is slow to be solicited by many of our respondents. The state operator CAMTEL, which is older than all the others, is of little interest to the respondents.

### Best farmer chat partner through cell phone

Farmers in the Menoua Division communicated with a number of agricultural partners. Among them are the best partners who provide farmers with agricultural information. The table below presents a listing and the proportions relating to the best discussion partner of our respondents.

**Table 2: Distribution of respondents according to the best discussion partner by phone**

| Discussion partner          | Workforce  | Percentages |
|-----------------------------|------------|-------------|
| Traders                     | 87         | 43.5        |
| The agricultural post chief | 2          | 1.0         |
| ZEA                         | 4          | 2.0         |
| The other farmers           | 76         | 38.0        |
| The elite                   | 3          | 1.5         |
| The <i>pambé</i>            | 2          | 1.0         |
| Other                       | 15         | 7.5         |
| <b>Total</b>                | <b>189</b> | <b>94.5</b> |

Table 2 shows that 46% of the respondents who used a mobile phone use it to talk to traders and 40.2% use it to talk to other farmers. The considerable differences can probably be explained by the fact that traders are for farmers the outlet for their produce, whose yield regularly depends on exchanges of information between colleagues. The support of the heads of agricultural posts is almost nil among our respondents. These latter are nevertheless expected to be very close to the producers to support and ensure the reliability of their information before use. The ZEA work the most with the groups and the elite of the Menoua Division seem to be very egocentric at the same time that they only help a few farmers in their family. Calling the carriers is not primarily the prerogatives of our respondents who sell the fruit of their efforts on the spot in the fields, or at points of sale known to all. The people who practice *pampé* have, moreover, points of expectation in common and our interviewees only contact those with whom they have a certain affinity. The others mentioned in this table refer to telephone correspondents whose subject of communication does not fall within the agricultural domain. The respondents alluded

to talks in relation to family and private concerns. They cited amongs others: their offspring and their friends. It should be noted that a few respondents added transporters to this important list.

### Mobile phone services

In the agricultural sector, the mobile phone offers a set of informational services to farmers. The respondents in the Menoua Division admitted to benefiting from 5 services as shown in the table below.

**Table 3: *Distribution of respondents according to the services provided by the mobile phone***

| Mobile phone services                                    | Workforce  | Percentages |
|--|------------|-------------|
| Send information about your productions to organizations | 23         | 11.5        |
| Receive news on agricultural issues                      | 94         | 47.0        |
| To have information on market prices                     | 46         | 23.0        |
| Have information on the agricultural calendar            | 4          | 2.0         |
| Make appointments with the <i>pamper</i>                 | 5          | 2.5         |
| Other  | 17         | 8.5         |
| <b>Total</b>   | <b>189</b> | <b>94.5</b> |

Table 3 shows that in the Menoua Division, 47.0% of the respondents use their mobile phones to get news in the agricultural sector and 23% use them to be informed on the market prices of their products. The differences observed seem to be due to the fact that current events in the agricultural field offer possibilities for farmers to adapt to the various current and future agricultural seasons. It is important to know how the prices of foodstuffs vary in the markets in order to make estimates of the cost of a given crop year. Sending information on their productions to organizations is a way for the respondents to exercise control over the development of production and to ensure better productivity progressively over the course of the agricultural seasons. The agricultural calendar would generally not change but it would undergo periodic and annual adjustments according to the preferences and specializations of the farmers. It may be that the good climate between our interviewees and the people they are looking for as paid labor forces them, after a few successful experiences, to make appointments with them by cell phone.

### Conclusion

In short, ICTs are gradually revolutionizing the agricultural sector. ICTs represent a source of agricultural information which tends to become the most popular. As a channel of agricultural information, the mobile phone has also reached its peak in this area. The contribution of ICTs in agriculture helps to talk about the diversity of information sources which shows that farmers use all possible channels to be able to obtain information in their fields of activities. Thus, the need for this article is to mobilize and promote ICT including mobile phones, social networks and computers. CTA (2012) thinks that the emergence of ICTs would make this popularization efficient and convenient through timely advice. This explains why the mobile phone is the central channel in the various transactions of agricultural information, which has also revolutionized agricultural information for nearly two decades.



### **Recommandations To government**

1. The government would benefit from informing farmers through their mobile phones by sending those messages relating to seminar and the holding of events such as agropastoral fairs.
2. The government should organized training of the importance of the use of and the use of itself to the cell phone as tools of informal research via the internet by the farmers.the same is trueby the computer.

### **To farmers**

1. Farmers should help each other and train together in the use of tic for the benefit of their daily activities.
2. Farmers should have their own personnal mobile phones
3. Farmers should create their whatsapp groups to discuss about agricultural informations.

### **To various mobile operators**

- The various mobile operator sould also get involved;
- They should organize ICTs competition on internet, waiting answer through internet groups by using mobile phones or computers.

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