Chapter 9
Findings of the Study

9.1 Findings of the Study

This chapter contains the analysis and findings. The chapter has five parts. Part A summarizes the analysis of the organizations and levels contributing to mKisan with state wise analysis. Part B is the analysis of Kisan Call Center calls and Part C contains the opinions expressed by the farmers during the survey conducted. Part C includes the analysis of individual messages from two selected offices and part E summarizes the best practices which can be incorporated in the mKisan and KCC from other similar projects. The data for Part A, B and D has been accessed from mKisan/Kisan Call Center Dashboard available at www.mkisan.gov.in. In Part A & B analysis is limited to major states with more than 5 lakh farmers.

9.2 A. Organizational Analysis

9.1.1 Registration of Farmers

Farmer registration is critical to the success of the project. With a total registration of 2.7 crores farmers, the project achieved a registration of 22.8 % of the total farmers (11.9 Crores as per State of Indian Agriculture-2016). Among the major states (21 States) with more than 5 lakh farmers, only 10 states achieved more than 30 % of registrations.

States like Rajasthan and Karnataka which are having large number of farmers are at the bottom of the table indicating that more efforts are required for creating awareness about the project in these states. A detailed list containing all the states is at appendix 1.

The five states having highest registration and lowest registration are as follows.

Table 9-1 Percentage Registration of farmers in mKisan

State	Number of Farmers*	Farmers registered	% of farmers registered
States having High % of registration			
Kerala	670253	601543	89.75
Odisha	4103989	2359368	57.49
Andhra Pradesh (Incl Telengana)	6491522	3627717	55.88
Maharashtra	12569373	4728279	37.62
Uttar Pradesh	19057888	6593468	34.60
States Having Low % of Registration			
Karnataka	6580649	381657	5.80
Rajasthan	13618870	773040	5.68
Uttarakhand	1580423	89419	5.66
Jammu And Kashmir	1245316	53012	4.26
Assam	4061627	45954	1.13

(*Based on number of cultivators in State of Indian Agriculture 2015-16 published by Department of Agriculture, Government of India)

9.1.2 Number of Messages received by farmers

To keep the farmers engaged into this stream of information, it is required that relevant information should regularly reach the farmers. The number of messages reaching the farmers is important in this regard. 10 % of the messages are from national level functionaries and are ignored in the state level analysis below. Among the major states, the messages per registered farmer (in the year 2017) varies from 9.5 in J& K to 168 in Himachal Pradesh. Even for sending 2 messages /week around 100 messages per farmers is required in the year and only one state, HP has sent more

than 100 messages per farmer. Even Uttar Pradesh and Andhra Pradesh is figuring in the worst 5 states among the major states. Detailed table is available at appendix 2.

The top 5 and bottom 5 states are indicated below.

Table 9-2 Number of Messages to the farmer from mKisan platform (state wise analysis)

States	Messages	Registered farmers	Messages per farmer in the year
Top 5 states			
Himachal Pradesh	110623060	655750	168.70
Haryana	24888813	261819	95.06
Karnataka	36265598	381657	95.02
Maharashtra	380275174	4728279	80.43
Chhattisgarh	106281565	1368345	77.67
Bottom 5 States			
Rajasthan	18002463	773040	23.29
Bihar	18285920	791327	23.11
Andhra Pradesh	59789923	3249987	18.40
Uttar Pradesh	121138754	6593468	18.37
Jammu And Kashmir	506239	53012	9.55

9.1.3 Important Sectors figuring in the messages

India is having a huge number of small and marginal farmers for whom multi sectoral approach is essential for making the farming profitable. A sectoral analysis of the entire project reveals the following trend. Among the 7 sectors figuring in the dashboard of the portal, 88% messages belong to Agriculture sector while only Horticulture and Animal Husbandry sectors are having at least some messages in addition to the agriculture sector. The importance of other sectors for marginal farmers is well established but the messaging trend is not in tune with this requirement. Detailed table is available at appendix 3 .

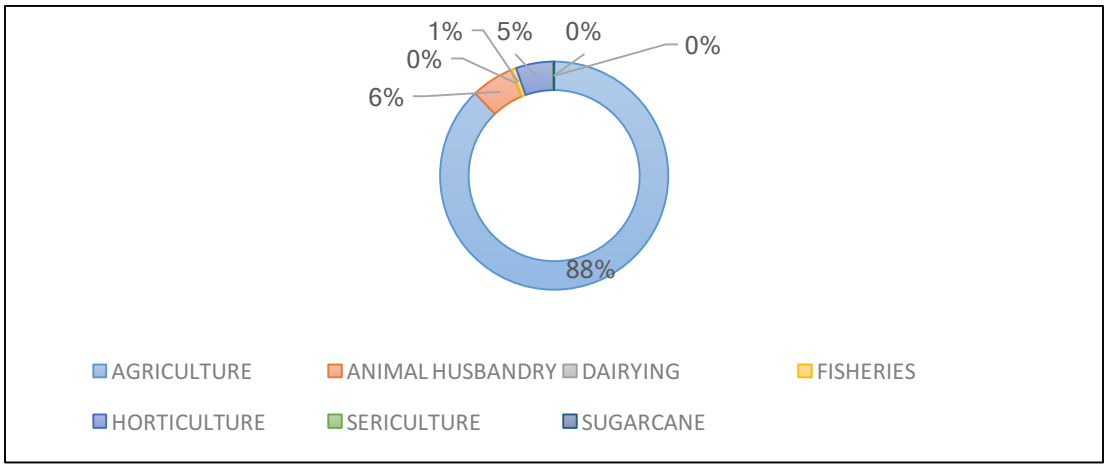

Figure 9-1 Sector wise messages,mKisan

9.1.4 Type of Organisations

The Kisan Call Centre and mKisan were rolled out by the Government of India but both the project needs the support of various stakeholders to make the projects useful to farmers. While calls to Kisan call centre is a farmer initiated process, mKisan messages are initiated by the officers in various departments.

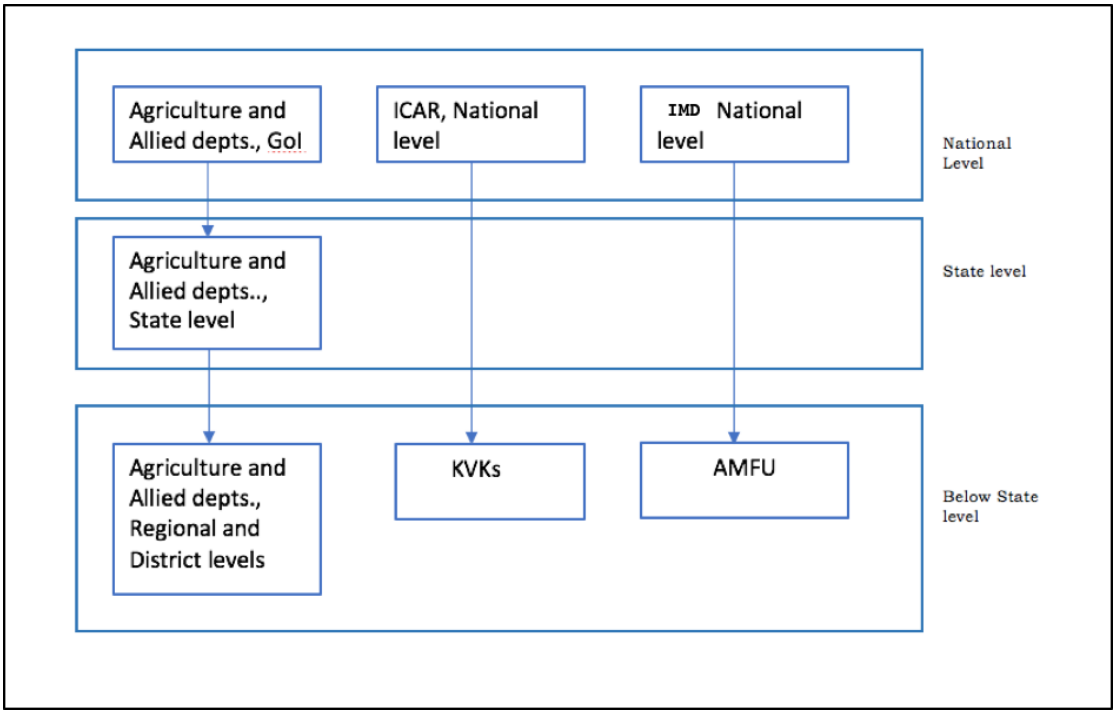

Figure 9-2 Organisational chart of SMS initiators in mKisan

The messages from national level will reach all the farmers in the country (selective sending of SMS state wise/District wise/block wise is also

possible) while state level messages will reach all farmers in the state. The below state level offices can send their messages to farmers of their jurisdiction. This means as the level goes up, the messages becomes more generic losing the personalized character of the messages. Agriculture is highly dependent on the agro climatic zones and therefore localized messages will help farmers more.

The percentages of messages contributed by the organizations are as below. A detailed table is available at appendix 4. The major organizations involved are Krishi Vigyan Kendras (KVK), Agro Meteorological Field Units (AMFU), State Government Agricultural Department, Department of Agriculture (Government of India)(DAC), Indian Council of Agriculture Research(ICAR) & its organizations and Indian Metrological department(IMD). AMFU comes under IMD and KVKs are included in the ICAR in the pie chart below.

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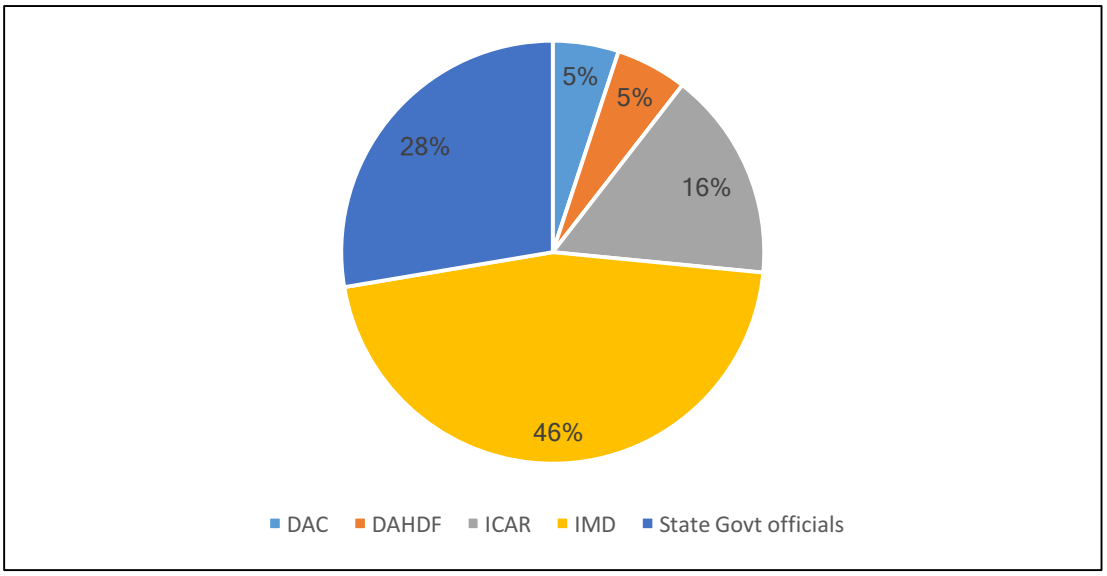

Figure 9-3 Percentage of messages sent by organisations(mKisan)

AMFUs amounts to 46 % of the SMS received by farmers while 16 % is sent by ICAR and 28 % by State Government officials. AMFU active role is visible from the above chart. ICAR also contributes substantially in sending the messages.

When analyzing the decentralization in sending the messages scenarios has been analyzed. One analysis is done on messages from AMFU and KVKs and another one without AMFU and KVKs i.e. the messages from line ministry alone.

9.1.4.1 Analysis including messages from AMFU and KVKs

As KVK and AMFU messages are localized messages and since their share in the total messages is very high, the number of messages send by offices below the state level are quite high in most of the states.

Table 9-3 Percentage of Messages not from State Head Quarters: (including AMFU/KVK)

State	Total Messages	Non State HQ Messages	% of Non State HQ Messages
State having high percentages of Non HQ Messages			
Jammu And Kashmir	506239	506239	100.00
Assam	2280929	2280929	100.00
Bihar	18285920	18285920	100.00
Punjab	13099982	13099982	100.00
West Bengal	25842169	25842169	100.00
Madhya Pradesh	61216899	61216767	100.00
State having low percentages of Non HQ messages			
Chhattisgarh	106281565	75708111	71.23
Himachal Pradesh	110623060	75212277	67.99
Karnataka	35011770	23576384	67.34
Kerala	41542423	27728685	66.75
Gujarat	49433982	20372544	41.21

Six states have 100 % of their messages originated from district level/zone level. (But in some of these states only KVK and AMFU are active with line ministry not sending any messages.) Detailed table is at appendix 5

9.1.4.2 Analysis excluding messages from AMFU and KVKs

To analyse the performance of line ministry in the states an analysis is made excluding messages from KVKs and AMFUs. A detailed analysis is at appendix -6

Table 9-4 Percentage of Messages not from State Head Quarters:mKisan (excluding AMFU/KVK)

States	Total messages from dept.	Non HQ messages	% of Non HQ messages.
State with high Non HQ messages in Departments			
Bihar	7697699	7697699	100.00
Punjab	2449452	2449452	100.00
Madhya Pradesh	7349443	7349311	100.00
Andhra Pradesh	6979051	6737901	96.54
Uttar Pradesh	63378263	46160465	72.83
State with low Non HQ messages in Departments			
Telangana	2878989	260856	9.06
Gujarat	31277130	2215692	7.08
Chhattisgarh	32340835	1767381	5.46
Uttarakhand	628857	16346	2.60
Kerala	13832250	18512	0.13
States with No activity in Departments			
Assam	0	0	
Jammu And Kashmir	0	0	
West Bengal	0	0	

On reviewing the result it can be seen that among the states which performs with high % of Non HQ messages, only UP is having a high number of messages. Also there are states with very little activity by line departments. The departments of 3 states among the major states have never sent any messages to farmers using this facility. Since line

ministry's are supposed to lead the extension activities, the inactivity of some of the states in this project needs further detailed analysis.

9.1.4.3 Contribution of ICAR/State Govt./AMFU

As pointed out earlier a proper mix of inputs from all stakeholders are essential for the success of the project. A detailed analysis is made on the percentages of messages pushed by KVK, State Head Quarters, State District/Zonal offices and AMFUs within a state. A huge variation can be found between the states in this regard. In most of the states AMFU and KVKs are active. The participation from state widely varies from state to state. Himachal Pradesh, Bihar and Uttar Pradesh are the 3 states were state government has been found to be active in comparison to KVKs and AMFUs. In this 3 states District and zonal messages from state government officials constitute more than 20% of the messages. The detailed table is at appendix-7.

9.3 B. Analysis of Calls received at Kisan call Centre

Kisan call center was established way back in 2004 and there was lot of effort to create awareness about the same among the farmers. As indicated in earlier chapter, there is a sharp increase in number of calls received in KCC after 2012 indicating the increased interest of farmers in KCC. A state wise analysis is made about number of calls made during the year 2017. A detailed table is available at appendix 8. The number of calls per thousand farmers in 2017 varies from 137 in Punjab to 3 in Jharkhand. Only three states Punjab, Haryana and Tamilnadu has more than 50 calls from 1000 farmers. Three states Chattisgarh, Assam and Jharkhand has less than 10 calls per 1000 farmers. Since Kisan Call Centre is a farmer initiated process, the number of calls is a clear indication of farmers awareness about the system and how much confidence farmer is having about the system that it will give answer to his queries.

9.4 C. Analysis of Farmers opinion

9.1.5 Rural Study visit

During the rural study visit of Uttar Pradesh in the district of Baghpet and Ghaziabad villages (4 villages were visited, Pura Mahadev, Mawi kalan, Kanauja, Basantpur Saitli), discussions were carried out about various government schemes including e-Governance activities. Interestingly only one of the villager was aware about Kisan Call Centre and no one had even heard about mKisan . Many villagers were still not comfortable with SMS reading even if the message is in their local language. This points out the importance of voice communication as villagers will be more at ease with speaking over the phone rather than reading an SMS. The lack of awareness about such important schemes among villagers is alarming. Such schemes which benefits villagers need to be given wide publicity not only through the normal channels but also through other channels like Gramasabhas and extension & health workers, radios and television

9.1.6 Telephonic Survey

As there was no much response during the study visit conducted to the villages, to get the opinion of the farmers a telephonic survey was conducted. 30 farmers, 15 each from Uttar Pradesh and Madhya Pradesh were contacted over phone. To select the farmer's mobile number for the survey from a farmer database, the mobile numbers were crosschecked with mKisan registration site to verify whether the farmer is registered with mKisan. 221 farmer mobile numbers were scrubbed against the data base of mKisan using the public interface available for farmer registration. 123 mobile numbers were found to be registered with mKisan and among these 95 farmers who were having at least one crop as their preference were selected for the survey. During the survey one call each was made to these numbers. No second call was attempted, i.e. farmer who answered the first call only was included. Interestingly among this 95 numbers, seven numbers were not existing as per the operator announcements received during the call. This essentially means among the farmers who indicated their preference as per the mKisan database, 7.4% mobile numbers do not exist now. In addition, 22.8 % (Only 95 out of 123 is having preferences)

registration in the database sample do not have a preference indicated which means they are currently not receiving any SMSs.

9.1.6.1 Survey methodology

Structured questionnaire was difficult to administer during a telephonic survey and therefore unstructured conversation is used for getting information. Efforts were made to get the following information during conversation.

- Is the farmer receiving the SMS from mKisan ?
- Is the farmer getting benefitted out of the SMSs
- Is frequency of the SMSs optimum ?
- What type of information is received through SMSs?
- Is there any problem in contacting Kisan Call Centre?
- Whether you are getting answers to your queries properly from KCC ?

The number of crop practices registered by the 30 farmers is enumerated below. Each farmer can select 1 to 8 crop practices.(like wheat/Rice/Fishing etc ..)

Table 9-5 Number of crops registered in mKisan by surveyed Farmers

Number of Crop practices registered	UP	MP	Total
1 and 2	5	4	9
3 and 4	5	8	13
5 and 6	3	1	4
7 and 8	2	1	3

The answers from the 30 farmers were analyzed and the results are as follows

9.1.6.2 The SMS reception by the farmers

To the question whether he has received/receiving the SMS, three type of answers were received. These were 'Yes', 'Reduced recently' and 'No.

Table 9-6 Reception of SMS By Farmers						
	UP		**MP**		**Total**	
Total Response	**15**		**15**		**30**	
Yes	8	53.33%	9	60.00%	17	56.67%
Reduced Recently	6	40.00%	3	20.00%	9	30.00%
No	1	6.67%	3	20.00%	4	13.33%

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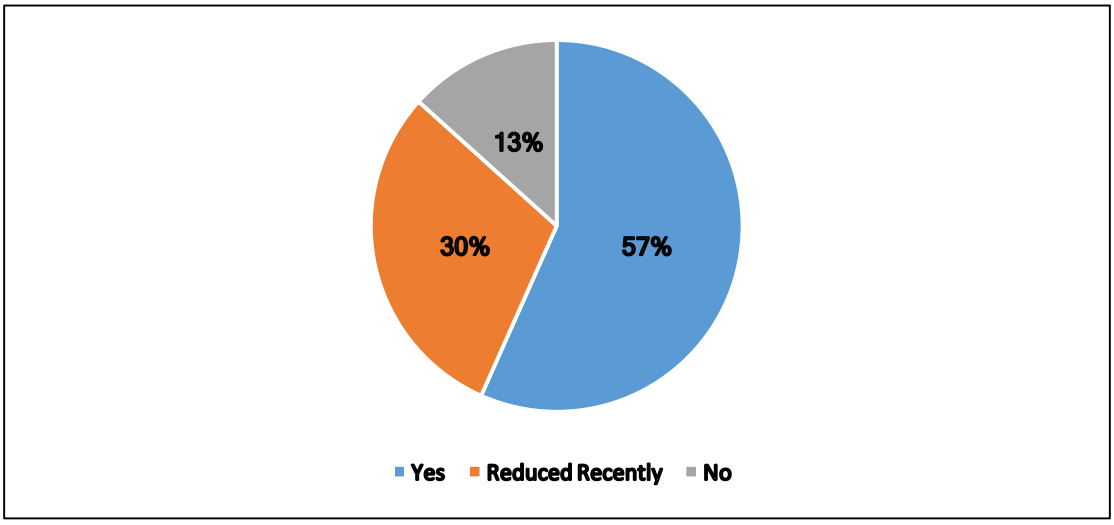

Figure 9-4 Opinion of Farmers about reception of Messages

While 87% of registered farmers received the messages, 30% opined that the SMS.s has been reduced considerably. 4 among the 30 farmers has indicated that they have never received any messages from mKisan.

9.1.6.3 Benefits from mKisan

The question about any benefits accrued from this messaging, all the 24 farmers who responded answered affirmatively. But 6 farmers that is 25% were not so enthusiastic about the scheme and answered the benefits are 'not much'

Table 9-7 Are the messages beneficial ?						
	UP		**MP**		**Total**	
Total Response	**12**		**12**		**24**	
Yes	10	83.33%	8	66.67%	18	75.00%
Not much	2	16.67%	4	33.33%	6	25.00%
No	0	0.00%	0	0.00%	0	0.00%

It is also to be noted that there are more 'not much' answers from MP than UP. In general we can conclude that most of the farmers are satisfied by the messaging services.

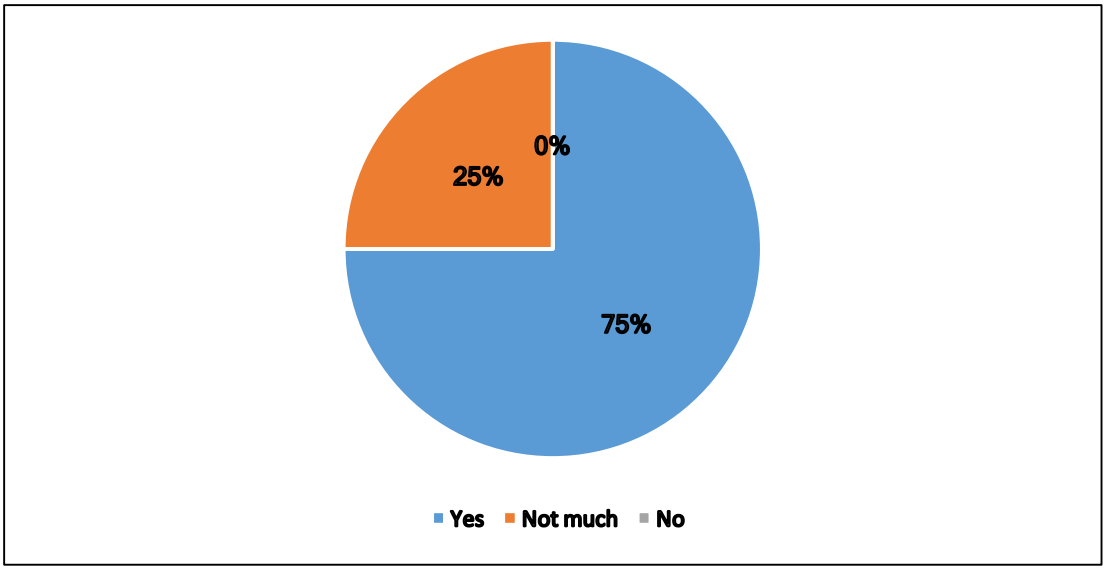

Figure 9-5 farmers opinion about benefit of messages (in percentages)

9.1.6.4 The frequency of the messages

Most of the farmers have commented that the frequency has reduced recently and expect at least 2 to 3 messages per week. A whooping 72 % of the farmers has answered that they expect more messages and currently frequency is very less. In Madhya pradesh more farmers suggested for more messages compared to Uttar Pradesh.

Table 9-8 Frequency of messages						
	UP		**MP**		**Total**	
Total Response	**11**		**11**		**22**	
Yes	4	36.36%	2	18.18%	6	27.27%
Less	7	63.64%	9	81.82%	16	72.73%
More	0	0.00%		0.00%	0	0.00%

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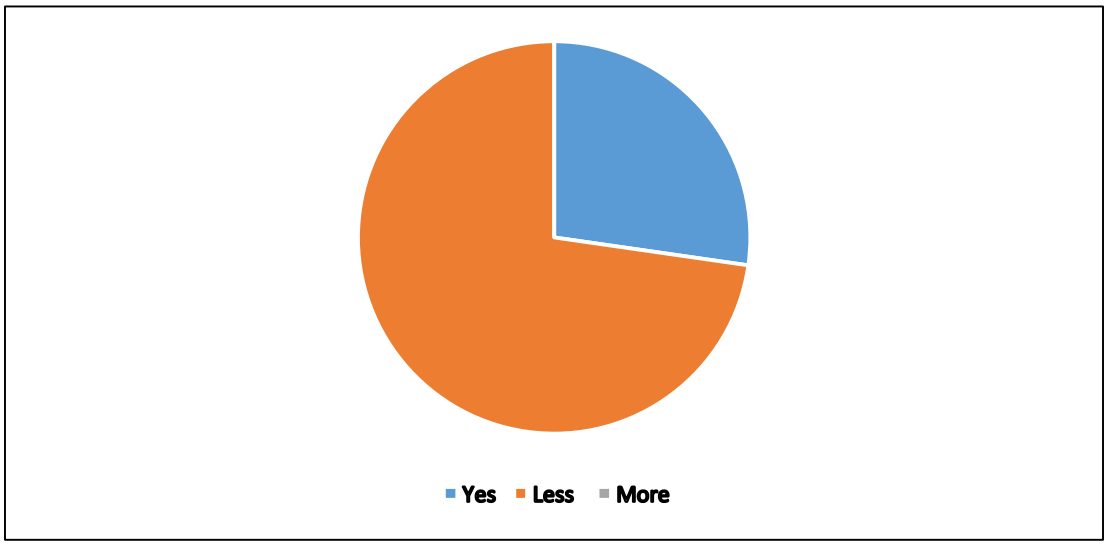

Figure 9-6 Farmers opinion about frequency of messages

9.1.6.5 Contents of Messages

The farmers were asked to talk about the contents of the messages received through this service. 6 types of messages were broadly identified by the farmers. Crop production technologies and Weather information are the major answers given by the farmers. 50% of farmers talked about crop production techniques and 44% about weather information. Interestingly market information has been indicated by only 11 % of the farmers.

Table 9-9 Content of Messages (Multiple answers taken from farmers)						
	UP		**MP**		**Total**	
Total Response	**10**		**8**		**18**	
Crop Production	6	60.00%	3	37.50%	9	50.00%
Plant protection	3	30.00%	3	37.50%	6	33.33%
Weather	7	70.00%	1	12.50%	8	44.44%
Market info	1	10.00%	1	12.50%	2	11.11%
Animal Husbandry	1	10.00%	1	12.50%	2	11.11%
Seeds	1	10.00%		0.00%	1	5.56%

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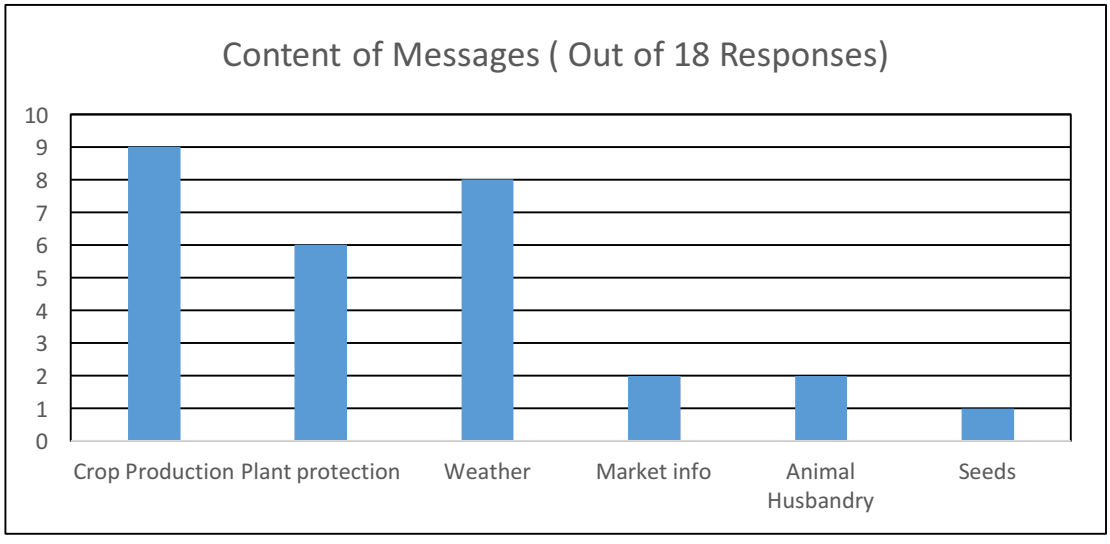

Figure 9-7 Content of Messages : farmers opinion

9.1.6.6 Accessing Kisan call Centre

To the question whether they are able to access the Kisan Call Centre without any difficulty, 4 group of answers were received. While majority of farmers indicated that they were able to access the Kisan call Centre without any difficulty, some opined

that they were getting lines busy announcement when calling the Kisan Call Centre. Some were not aware of such a Call center and some were not calling KCC recently.

Table 9-10 Access to KCC

	UP		MP		Total	
Total Response	**15**		**15**		**26**	
OK	11	73.33%	9	60.00%	20	76.92%
Busy	1	6.67%	3	20.00%	4	15.38%
Not calling	1	6.67%	3	20.00%	4	15.38%
Not calling Recently	2	13.33%	0	0.00%	2	7.69%

As can be seen from the table, issues about the access is much more in Madhya Pradesh than Uttar Pradesh.

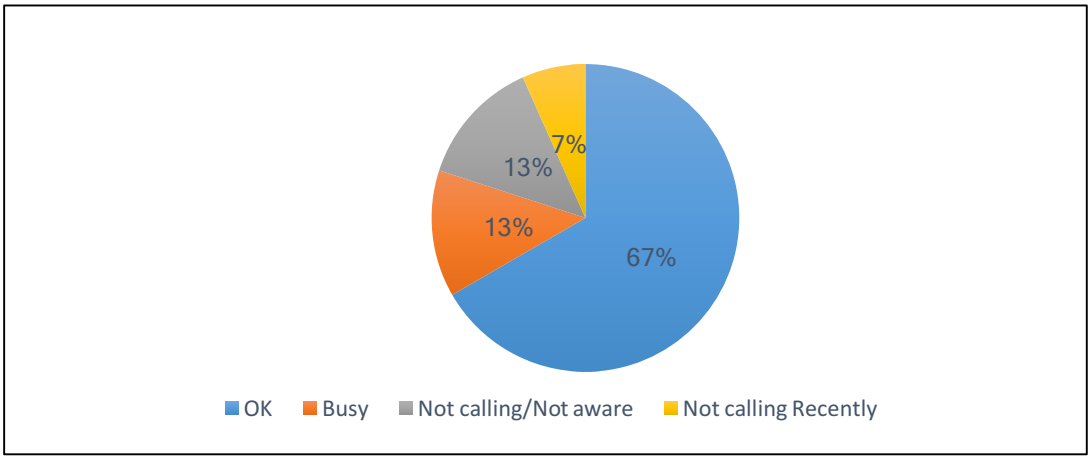

Figure 9-8 : Farmers opinion about accessibility of KCC

9.1.6.7 Opinion about the answers from Kisan Call Centre

Asking about how useful was the answer from Kisan Call Centre, many of the farmers indicated that they are satisfied with the answers to their queries but some have indicated that answers were not direct and solutions told by them could not be followed as the pesticides recommended by them were not available in the local market.

Table 9-11 Are Answers from KCC useful						
	UP		**MP**		**Total**	
Total Response	**12**		**12**		**24**	
Yes	11	91.67%	8	66.67%	19	79.17%
Not helpful answers	1	8.33%	4	33.33%	5	20.83%

Some of the farmers opined that they were able to escape from the clutches of local pesticide dealers who used to thrust upon them multiple pesticides when advice were sought about pest incidences. Now they will call KCC before going to the dealer and ask for the specific pesticides.

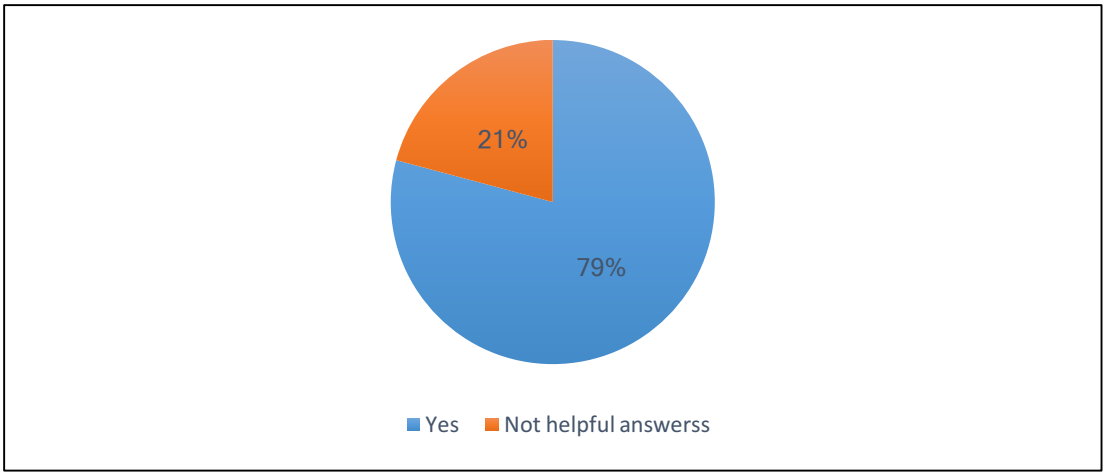

Figure 9-9 Useful ness of KCC answers

While both narratives are available, the opinion that answers were helpful outnumbered the other opinion by large margin. But the difference is not much in Madhya Pradesh indicating some issues in the KCC functioning of Madhya Pradesh.

9.5 D. Analysis of Individual Messages

The messages sent by two offices one each from Uttar Pradesh and Madhya Pradesh were analysed in detail. Most of the messages sent by these district offices

were related to schemes and subsidies. Interestingly in the case of one office, around 15% of messages were related to greetings which can be avoided from such a platform. The Offices were selected from Ambedkarnagar district (DD Agriculture) in UP and Ujjain District (Project Director ATMA) in MP.

Table 9-12 The Analysis of individual messages from two offices

	Officer 1(MP)		Officer 2 (UP)	
Type of Messages	Advisories	Messages	Advisories	Messages
Crop	4	150443	0	0
Information	1	37607	1	84690
Meetings	2	75205	6	526403
PP	1	37624	2	134721
Scheme	17	639371	16	1069866
Training	1	7141	0	0
Greetings	0	0	4	341142
Internal	0	0	15	3569
Seeds	0	0	1	122461
Correction	0	0	1	67455
Grand Total	**26**	**947391**	**46**	**2350307**

It is important to take note of the fact these SMSs do not have much content related to trainings which is one of the essential component of agricultural extension.

9.6 E. Good Practices from International & Private experiences

9.1.7 More comprehensive intervention is advantageous:

Farmer's issues are not limited to knowledge asymmetry alone. To take advantage of the information received especially in case of market information, the ecosystem should provide viable alternatives. Bargaining power of the farmers had seen improved in many projects like e-Choupal where the projects provided alternative channel of trading the agriculture produce.

9.1.8 In addition to SMS, Out Bound Calling also needs to be explored:

Many international and national experiences showed that farmers are more comfortable with voice communication. Today broadcasting method under mKisan /KCC is limited to SMS. Projects like green SIM and Kushal Zamindaar (Pakistan) has effectively used the outbound voice communications and many studies on this projects indicate that the voice communication in dialogue forms has been a big hit with the rural farmers.

9.1.9 Aggregating the farmers:

Many initiatives like mKrishi has effectively aggregated the farmers as a part of project so that their bargaining power can be used collectively. It also opens up alternative for channels for input buying as well as product selling.

9.1.10 Human handholding:

Projects like mKrishi and e-Choupal has used a intermediary for hand holding the farmers. Farmers who may not be so well versed with new technologies may be interested in getting such handholding. They may be trained how the information can be interpreted and used in their advantage.

9.1.11 Information from other sectors:

Farmers are interested in the information from other sectors like health and education.(Green SIM Project) An effective coordination with other sectors will add value to the messaging service.

9.1.12 Targeted advertisements:

Targeted advertisement is used to capture new subscribers to the service in many international cases. The face to face discussions with farmers of Baghpet and Ghaziabad villages indicates that still many farmers are unaware of such initiatives.

9.1.13 More accurate market information:

The MFarm in Kenya had placed its own data collectors in wholesale markets to accurately collect the market information. While the government is having mechanisms to collect the market information, bringing accuracy to this is critical to the acceptance of market values broadcasted over the system.

9.1.14 Creating a network where all stakeholders are present.

In addition the information a network linked to all stakeholders are required. This includes input dealers, traders, credit supplying agencies , insurance companies. Such a network will help farmers to collectively bargain with these stakeholders.

The analysis of the organizational involvement in mKisan reveals that there is a wide variation in involvement of state government in this initiative. The farmers opinions also points out that there is scope for further improvements and farmers are looking forward for such improvements. The recommendations based on these findings is enumerated in next chapter.