

Livelihood Solutions through Mobile Technology: An Assessment

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About the Study

The study is a part of the joint study by the Rural Research Centre of Institute of Rural Research and Development (IRRAD), International Development Research Centre (IDRC) and Practical Action. Mewat has been long ignored by policy makers who work on poverty issues and empowerment as it is located within the state of Haryana, a well developed state. Mewat however, has remained underdeveloped due to its location in the semi arid regions with the dominance of agriculture as the major livelihood option. The major bottleneck in this region is the knowledge gap in the agricultural sector. The introduction of ICT Mobile Technology in 2009 could be seen as an emerging opportunity to fill the knowledge gap in agriculture and improve the livelihood and development of the region. On this backdrop, this paper evaluates the impact of ICT intervention in Mewat region using the Sustainable Livelihood framework and also identifies the scope for its up scalability.

Table of Contents

	Subject	Page Nos.
	Abbreviations	
	List of Tables	
1.0	INTRODUCTION	1-7
	1.1 Background	1
	1.2 ICTs in Agriculture	3
	1.3 The Ongoing ICT initiatives in India	3
	1.4 Context and relevance of the study	4
	1.5 The IRRAD's Sustainable Livelihoods Model	5
	1.6 Research questions addressed	6
2.0	METHODOLOGY	8-11
	2.1 Background	8
	2.2 Objectives	8
	2.3 Hypothesis	8
	2.4 Research Design	9
	2.5 Variables	9
	2.6 Tool preparation, pilot testing and finalization of tools	9
	2.7 Sampling	10
	2.9 Data Collection and Analyses	10
	2.9 Impact Areas Covered	11
3.0	RESULTS AND FINDINGS	12-17
4.0	FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	18-27
	REFERENCES	
	ANNEXURE	

List of Abbreviations

IRRAD	Institute of Rural Research and Development
ICTs	Information Communication and Technologies
VCs	Village Champions
KMs	Kisan Mitras
IDRC	International Development Research Centre
KHETI	Knowledge Help Extension Technology Initiative

LIST OF TABLES

Table 1:	Primary Information on Respondents
Table 2:	Demographic Details
Table 3:	Awareness about IRRAD Work
Table 4:	Income and Expenditure Patterns
Table 5:	Usage of Lifelines Technology Services
Table 6:	Time taken in Responding on Queries
Table 7:	Awareness and Use of other similar Services
Table 8:	Impact of Lifeline services on Farmers Livelihood
Table 8.1:	Soil Health
Table 8.2:	Change in the Area of Cultivable Land
Table 8.3:	Impact on Agriculture Produce
Table 8.4:	Impact on Savings
Table 8.5:	Impacts on Borrowing of the Loans
Table 8.6:	Impacts on Earnings
Table 8.7:	Impacts on Expenditure
Table 8.8:	Impacts on Assets Building
Table 9:	Lifelines Services Bringing Changes in Health
Table 10:	Lifelines Services Bringing Changes in Skill Enhancement
Table 11:	Lifelines Services Bringing Changes in Education
Table 12:	Lifelines Services Increasing Social Networking or Building Social Relations/Ties with Other Fellow Farmers/Kisan Mitras
Table 13:	Lifelines Services Increasing Inter Village Networking
Table 14:	Areas in Questions were asked using Lifelines Services
Table 15:	Impacts of the Information Availed through Lifelines Services
Table 16:	Accessibility of Information
Table 17:	Farmers Perceptions about Lifelines Technology
Table 18:	Farmers suggests for improvements in Lifelines Services
Table 19:	Use of Lifelines Services
Table 20:	Interaction with others to Seek Agriculture information
Table 21:	Problems with Farming/Livestock in the Last One Year
Table 22:	Use Of Mobile Services Like Lifelines Technology for Seeking Solutions for Agricultural/Livestock Problems in Future

CHAPTER I
INTRODUCTION

1.1 Background

The importance and potentials of Information Communication and Technologies (ICTs) has been established in every walk of life. ICTs are utilized to the fullest by various communities and groups having access to these. But, the access and usage of ICTs have been varied rather with the advances of ICTs; the 'Digital Divide' has become more prominent. People having access to ICTs are applying technology with innovations and making progress. But, the poor are neither having access to ICTs nor could get benefitted of their applications in true sense especially in rural areas which is inhabited by about 72 percent of the India's 1.1 billion people. They are unaware about applications and are compelled to follow traditional methods and approaches. In the words of Former UN General Secretary Kofi Annan, 'The new information and communication technologies are among the driving forces of globalization; they are bringing people together, and bringing decision-makers unprecedented new tools for development. At the same time, however there is real danger that the world's poor will be excluded from the emerging knowledge based economies'.

One of the very important sector i.e. agriculture, which could have been benefitted a lot with the applications of ICTs especially in bringing changes to socio-economic conditions of poor in backward regions of developing countries has largely remained deprived. Agriculture constitutes a major livelihoods sector and most of the rural poor depend on rain-fed agriculture and fragile forests for their livelihoods. Farmers in rural areas have to deal with failed crops and animal illness frequently and due to limited communication facilities, solutions to their problems remain out of reach. (World Bank, 2009)¹. In contrast, the developed nations and communities have used ICTs in agriculture very meaningfully and have been able to increase the produce by getting extension services and timely inputs.

In India, there are conflicting scenarios as the country is progressing rapidly with a GDP Growth Rate of 7.2% (Economic Survey, Government of India, 2009-10)² but only -0.2 Growth Rate for Agriculture, Forestry and Fishing sector (Economic Survey, Government of India, 2009-10)³. But the efforts to improve the agriculture sector, seem, are not in consonance with the requirements. Similarly, the realizations of the applications of ICTs came late. Problems are

more or less similar in other developing countries of the world and almost similar concerns are cropping up all over. Therefore, now, there is increasing policy thrust in developing countries to arrest declining agricultural productivity thereby leading to reductions in poverty and stress on environment.

The issues involved are complex as land holdings are small, fragmented, having low productivity and poor connection with extension services. Farmers lack basic literacy to understand new technologies and desperately need skills and support for production, processing and marketing. Traditional agriculture extension systems are weak and lack adequate manpower to effective support at the doorsteps of farmers (Madhwani and Pehu, 2010). Agriculture experts having low motivation to go to villages are largely located in urban settings. Poor villagers find it hard to travel long distances to take extension support due to their poor economic status and extremely poor transport network. They need timely knowledge support right at their villages as per their conveniences. They also need the persons who should proactively approach them in articulating their problems using participatory communication methods. There are obvious barriers of languages and cultural differences between input providers and the beneficiaries leading to top-down one way communication failing to achieve the intended purposes of benefitting the farmers and communities at large (Chapman et al. 2003). There is a growing feeling that a viable agriculture extension system for rural areas need to be radically different from traditional practices. Flexibility and innovativeness need to be hall marks of any alternative system of agriculture extension which could accommodate the existing popular local knowledge bases.

The recent advances in ICTs have proved to be a boon for the agriculture sector in general and for making the extension services effective, in particular by speeding up and managing information flows at various levels (Jones and Garforth, 1996). The UN Millennium Development Goal No. 8 has recognized the role of ICTs and the benefits of information and communications technologies in the fight against poverty (Goal 8: A global partnership for development, Target 8f). With the applications of ICTs, it is not that one gets benefitted through technologies but also from their potential to facilitate technological recombination and change leading to innovation (UNCTAD, 2008).

1.2 ICTs in agriculture

Of late, a lot of interest has been generated in applications of ICTs in various spheres of lives. In particular, importance of applications of ICTs could be seen in livelihoods promotions of poor and marginalized. In a meeting with Food and Agriculture Organization (FAO) in June 2008, UN Secretary General, Ban Ki Moon expressed that: “by the year 2030, we must increase global food production by 50%” [<http://www.reliefweb.int/rw/rwb.nsf/db900sid/EGUA-7FASWG>]. One strategic response for increasing global food productivity, is applying ICTs to disseminate agricultural knowledge and to enable farmers to apply agricultural inputs more efficiently. A recent international survey of e-agriculture, conducted by the UN’s International Telecoms Union (ITU) and the FAO, identified information exchange and communication processes as critical, highlighting the following areas:

- Developing virtual communities/networks for information and knowledge exchange between rural stakeholders, as well as for their empowerment through participation;
- Capacity building of rural stakeholders in use and application of ICT;
- Enhancing farmers and producers access to markets and information on farming techniques and practices;
- Improving dissemination of and access to scientific and technical information;
- Enhancing access to statistics and other types of information for policy and decision-making.

The other motivation is to see the penetration of ICTs in the lives of poor so that they could get benefit of the same.

1.3 The Ongoing ICT initiatives in India

There are many innovative experiments conducted by researchers and practitioners in India and globally. Though, these are in transitory phases but giving hopes and directions to the belief that the ICTs have potentials to be applied in strengthening the agriculture extension services besides managing the knowledge which is either already existing at various levels or will be generated in the process. Some of the important initiatives in the field using ICTS

(<http://www.solutionexchangeun.net.in/ictd/cr/cr-se-ictd-food-08070901.pdf> accessed on 25 October, 2009) were e-Sagu to provide timely and appropriate information to farmers using high resolution photographs of the crop examined by experts. The v-Agri programme was started to provide Integrated Nutrient and Pest Management services to farmers. The e-Agro initiative of eKutir has focused on the content part of the services using ICTs in the agriculture. Community media Lab of Gramnet and Madhya Pradesh Government's 'Radio Plays' were successful ICT initiatives. The Microsoft Research/Digital Green's use of digital videos enabled farmers to progressively become better farmers (Gandhi et al., 2007). The Farm News Broadcast on Doordarshan and All India Radio especially 'Krishidarshan' programmes provided context specific need based information in local languages at the door steps to farmers.

In Knowledge Help Extension Technology Initiative (KHETI) facilitated multi-media communication amongst the subject matter specialist, Agriculture Communication Specialists and service providers/farmers through mobile phone and Integrated Voice Response System (Mathews and Rizvi, 2008)..

1.4 Context and relevance of the study

The Institute of Rural Research and Development (IRRAD of S.M. Sehgal Foundation) focuses on integrated sustainable development in village communities with an approach to empower people to participate in furthering their own development in 17 villages in semi-arid regions of Mewat District, Haryana. Rural research is one of the major programmatic interventions of IRRAD with focus on three major thematic areas of impact assessment, poverty and livelihood dynamics and research innovation.

The Mewat region of Haryana falls under the semi-arid zones and were not benefited by green revolution. Agriculture is the major livelihoods option. But the inhabitants, mainly Meo-Muslims, still use traditional farming techniques and have not ventured into non-farm livelihoods. Apart from social exclusion farmers in Mewat are also victims of current climate changes. According to the World Bank's Natural Disasters Hotspot Analysis, most of these regions have been identified as hotspots for both floods and droughts that directly impact the

agriculture sector implying high risk for capital assets: Natural, Social, Physical, Financial and Human.

IRRAD's Income Enhancement program builds awareness on new technologies and modern agricultural practices as well as trains the farmers in adoption techniques. IRRAD in collaboration with One World South Asia has started LifeLines services in 2009. LifeLines is a telephone based agro-advisory service, to give technical expertise on a one to one basis for agricultural practices, seeds, market situation, prices, and other allied activities. The LifeLines which started in September 2006 to cater rural north and central India to increase livelihood and income opportunities covers about 150,000 farmer households across 3 states - Haryana, Madhya Pradesh and Uttar Pradesh

In IRRAD LifeLines was operationalised with help of mobile phones of Village Champions (VCs) and *Kisan Mitras* or Farmer's friends (KMs) {hence after KMs/VCs} who are full time staff of IRRAD stationed in intervention villages. The LifeLines services was in operation for about a year in 14 of IRRAD's intervention villages in the Mewat (IRRAD – ICT4RL research Proposal to ENRAP – IDRC, 2009)⁴.

The study was conducted as part of its impact assessment to see the feasibility of such an intervention and usefulness of partnership for livelihoods enhancement of the poorest in Mewat, in terms of who has access to it and how their livelihoods improved in relation to their socio-economic realities.

1.5 The IRRAD's Sustainable Livelihoods Model

The interventions in the Mewat region with the community were through a sustainable livelihoods model. Efforts were made to take care of the needs of the community in a holistic manner. It was realized that the community was still into the traditional and old practices and were not getting benefitted with the modern innovations especially were not using the facilities and services of ICTs. Initially the challenges are not only to create access of ICTs to people of the region but also get the importance of technology emerged and established in their lives

followed by the usage of technology. The LifeLines was found suitable with the help of KMs/VCs.

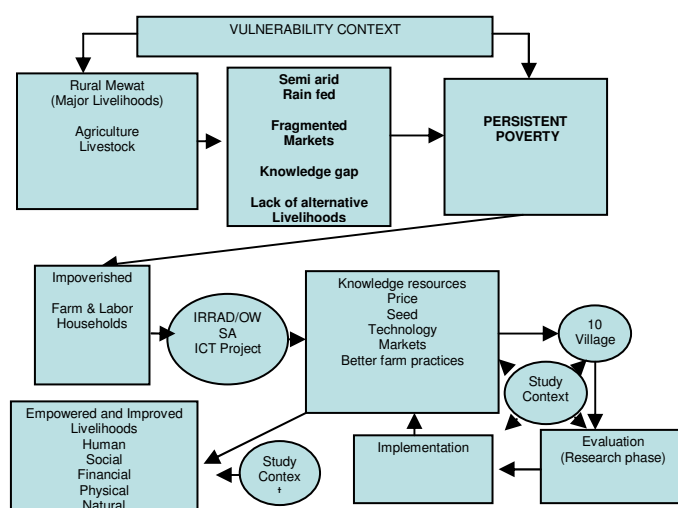


Fig: 1 IRRAD's Sustainable Livelihoods Model

1.6 Research questions addressed

This research addressed the question, whether and under which conditions the improved access to information and knowledge facilitated by LifeLines can enhance the individual and collective capabilities of the poor to better improve their livelihoods. The roles of information and knowledge for the empowerment of marginalized groups has been analysed besides accessibility to such technologies.

The study had looked into the following research questions:

- What are the constraints faced by farmers in accessing information?
- What are the specific end-user information requirements of farming communities?
- What are the key livelihood constraints in the research area?
- What are the direct impacts of LifeLines as an ICT delivery mechanism vis a vis livelihood improvement with regards to Social, Human, Financial, Physical and Natural Capitals

- How has LifeLines benefited the target community by building knowledge partnerships between the research and scientific community and the local community based organizations and civil society groups?
- Is there a need for strategic refinement/ improvement of the technology and process model to improve its efficacy and impact? If yes, what would be the broad contours of these refinements?

CHAPTER II

METHODOLOGY

2.1 Background

The methodology for the study has been kept very simple keeping into considerations the socio-economic demographics of the region and the people. Since study aims to assess the impact of an ongoing ICT intervention and its potential for up scalability within the culturally withdrawn and socio - economically backward regions of Mewat district in Haryana, so the methodology for the study used was with keeping the socio-economic demographics of the region and the people.

Efforts has been made to make the study processes very humane and ethical giving considerations to the local sensitivities by making the processes indigenous, comfortable and confidant to all.

The methodology proposed for the impact assessment study has been detailed below.

2.2 Objectives

- To assess the impact of an ongoing ICT intervention (mobile technology) within the culturally withdrawn and socio - economically backward regions of Mewat district in Haryana especially on livelihoods.
- To find out up-scaling potentials of LifeLines Services.

2.3 Hypothesis

Refined access to information through LifeLines leads to livelihood enhancements of the poorest and marginalized in Mewat

2.4 Research design

An ex-post-facto research design has been used in the study as the impacts of the interventions have already occurred. Besides studying the impacts on the beneficiaries of the LifeLines services, a control group with similar socio-economic realities has also been studied in the similar result areas to delineate the actual impacts of LifeLines services.

2.5 Variables

The variables in the study were of three kinds, as follows;

2.5.1 Independent/Measured Variables: Perceptions of lifeline services, accessibility of information, constraints in accessing information, importance of information, use of information in livelihoods areas etc.

2.5.2 Dependent/Matching Variables: Village, family income, caste, gender, crop, vulnerabilities, and information sector (e.g. agriculture, health, education, livelihoods etc.)

2.5.3 Extraneous variables: Other ICT interventions in the area in general and for the livelihoods promotions in particular, Government Schemes/Programmes, Resources and inputs from other agencies – GO, NGO, Civil Society, The individual and family innovations and efforts

2.6 Tool preparation, pilot testing and finalization of tools

A questionnaire in local language has been developed to quantitatively capture the information against the objectives of the study. To supplement the quantitative data PRA techniques such as focus groups, diagramming exercises, matrixes, and timelines were used. The quantitative and qualitative tools have been piloted on the target respondents to see its applicability and relevance. The necessary amendments have been made based on the findings of pilot testing of the tools.

2.7 Sampling

The research has been conducted in ten villages of three blocks inhabited by LifeLines beneficiaries. The sampling for the study was purposive as total number of beneficiaries used LifeLines services were taken for the study. Hence 145 respondents formed the experimental group. To see the impacts of LifeLines equal number of respondents who didn't use the LifeLines was selected as control group respondents for the study. For the analysis purposes only 107 beneficiaries could be retained from experimental group because of the irremovable noise from data from the remaining beneficiaries.

2.8 Data collection and analyses



Photo 1: PRA Exercises with Farmers and IRRAD Staff

To capture the impacts of Lifelines in the lives of the target beneficiaries comprehensively the quantitative as well as qualitative data have been collected using the questionnaire developed for the purpose and through PRA exercises especially timelines and focused group discussions. The quantitative data were analyzed using statistical methods in particular average and percentages.

The data generated through PRA exercises were analyzed through content analysis method in relations to the impact areas. The principal respondents to the study were the users of the Lifeline Services and equal number of respondents who didn't use Lifelines services. The *Kisan Mitras* and Staff of IRRAD have also been among the respondents on various parameters/indicators.

2.10 Impact areas covered

The impacts on community's livelihoods and other gains at various other levels have been covered under following broader areas;

- IRRAD Interventions
- Perceptions, understanding and usefulness of ICT interventions
- Services offered by Lifeline
- Use of services – the areas
- Changes and impacts in lives of people through the use of services across various livelihood areas. Also other direct and indirect benefits of intervention in lives of farmers and the development and research gains
- Other ICT intervention and services available in the area and their use
- Accessibility and usefulness of Lifelines across various services
- Constraints in using services
- Plans/future plans of beneficiaries in relations to the lifelines
- Sustainability and Scaling-up of the services/interventions
- Increased farm family savings (which can be invested in livelihood strategies that directly or indirectly improve agricultural production)

CHAPTER III

RESULTS AND FINDINGS

3.1 Background

The IRRAD beneficiaries in the study/document have been referred as experimental group whereas the non-IRRAD people taken for the study form the control group. The blocks and villages covered in the study are same for the experimental and control groups. Most of the questions have responses either already given or generated in the ‘multiple choice options’ so the percentages of these would not count as 100%. The findings of the study have been summarised as follows.

3.2 Demographic details

Total 10 villages each from the experimental and control groups from three blocks were covered in study. There were noticeable differences as far as the poverty and educational statuses and literacy levels were concerned. In experimental group about 19% respondents belonged to Below Poverty Line category whereas it was 23% in control group.

3.3 Awareness about IRRAD work

The KMs/VCs played major roles in spreading awareness about IRRAD’s work as more than 98% beneficiaries were aware about IRRAD’s work on providing information about seeds, toilets, soak pit, soil treatment, water conservation, running of stitching centres, education, health centre, dam construction and making of school boundary etc.

Interestingly 94% respondents in control villages were also aware about IRRAD.

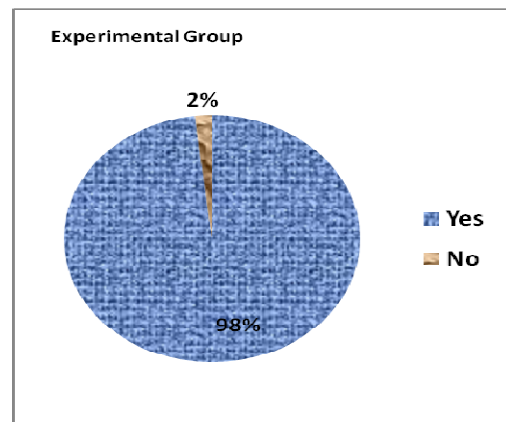


Fig 2 Awareness about IRRAD Work

3.4 Income and expenditure patterns

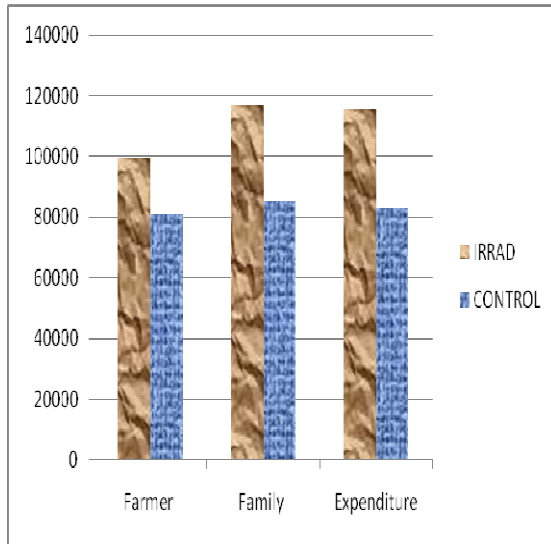


Fig 3 Income and Expenditure Patterns

The average family income in experimental and control groups were Rs. 116673 and Rs. 85007 respectively. The expenditures were mainly made in buying of agriculture inputs, on social occasions followed by food both in experimental and control groups.

3.5 Usage of LifeLines and the response time

On the usage of LifeLines services by experimental group only 20% reported that they used the services once in week, 25% said that that they used once in a month, 16% used once in three months, 7% used only twice in a year. 4 persons in 107 respondents admitted that they never asked any questions whereas about 14% shared that they use services when needed.

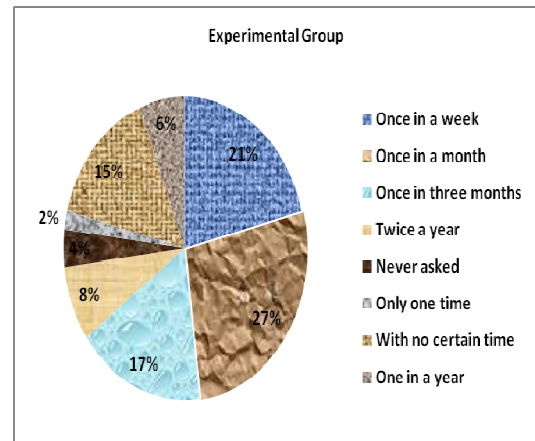


Fig 4 Usage of Lifelines

On the time taken to responding on the queries posed, majority of the respondents (72%) said that it took 1 to 2 days; about 13% said that it took about a week and even 11% said that they didn't get reply at all to their queries.

3.6 Impact of LifeLines services on farmers livelihoods

The LifeLines services played important roles in promotions of farmers' livelihoods. LifeLines services have impacted the soil quality leading to increased productivity with an annual average increase of 2.86 quintal for majority of the respondents in experimental group unlike control group.

In experimental group about 67% said that there was increase in saving and earnings because of increase productivity, disease control as a result of LifeLines services. The decrease in saving was reported by far more number of people in control group than the increase. The loan borrowing, too, was decreased after the advent of LifeLines in experimental group. It was rather increased in control group due to failed crops, decreased production, spending on social occasions, crop diseases, no work, increased expenses etc. and decrease in earnings was also reported by more number of people than the increase. As far as the expenditure was concerned similar trends were found. In experimental villages the inputs received as a result of LifeLines helped in decrease of expenditure.

Though on physical assets building such as house, tractor, bore well, land, buffalo, camel etc., the experimental group were found better than control group, yet the impacts were not as distinct as in case of savings, earnings, expenditures etc.

In comparison to the control group (15%) significantly far more number of respondents in experimental group (73%) admitted that LifeLines positively impacted on health fronts. The areas highlighted by beneficiaries were better nutrition (57%), increase in income (48%) and decreased visits to Doctors (45%) followed by increased work productivity and ability to perform domestic chores (26%). These were not noticeable enough in control group.

3.7 LifeLines services bringing changes in education and skill enhancement

As far as the impacts on education by using LifeLines were concerned 56% respondents in experimental group and only 29% in control group agreed on the positive changes in education

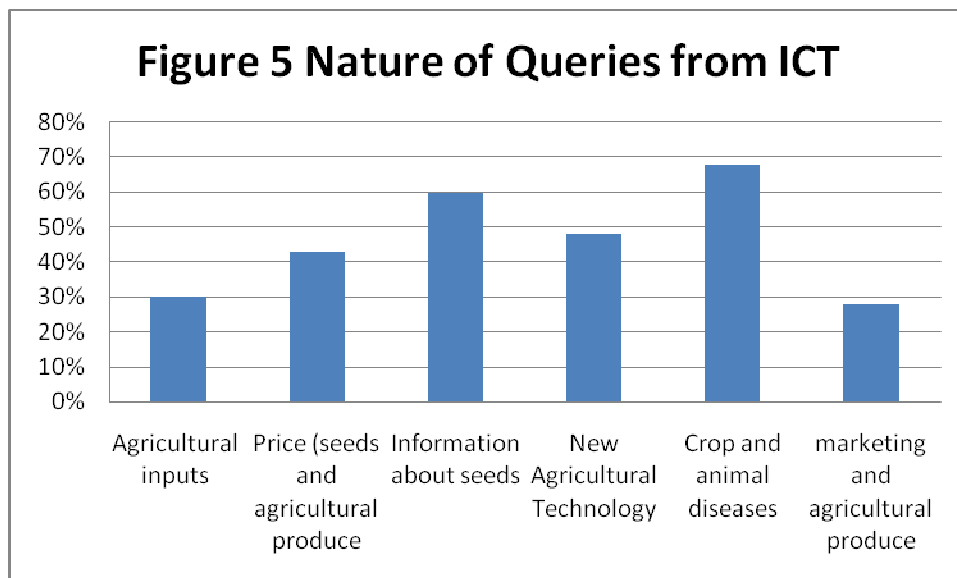
related areas. The areas where changes were expressed by experimental group were increase knowledge about new agricultural practices, technology, seed, fertilizers etc., and sending children to school, sending children to better schools and for higher studies/colleges. In skill enhancements LifeLines helped in learning a trade (40%) and diversified livelihoods (43%).

3.8 LifeLines services playing roles in building intra-village social relations and increasing inter village networking

LifeLines services played a prominent role in building social networking resulting in increased mutual trust and support between fellow farmers and Kisan Mitras, collective participation in village economic and social activities and increased co-operation among fellow-farmers. The social networking and building social relationships, otherwise, in control group were admitted by fewer people (36%). Same was found true about inter-village networking such as networking with agriculturalists/farmers (46%), block officials (5%), and linkages with external vegetable stores and markets (30%). In control group the increase in inter-village networking was reported by only about 8%.

3.9 Nature of queries for LifeLines services

The findings revealed that people in experimental group asked questions using LifeLines services in varied areas such as; on agricultural inputs (30%), price, seeds, agricultural produce (43%), information about the seeds (60%), new agricultural technology (48%), crop and animal diseases and control (68%), marketing of agricultural produce (28%) etc. in control group only 8% gave their responses in affirmation when asked about seeking such inputs.

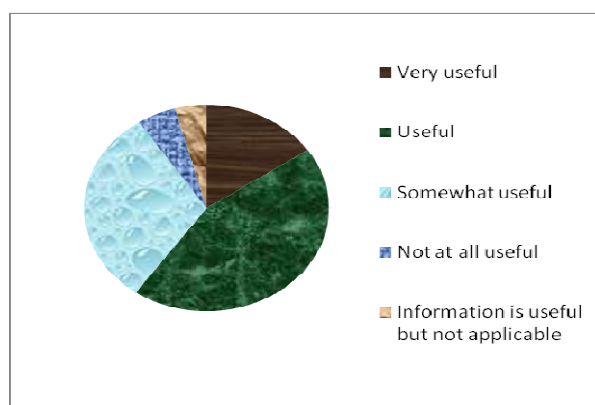


3.10 Accessibility of information and their impacts

The respondents were found satisfied with LifeLines in terms of accessibility of services, its timeliness, and the performances of Service Providers etc. 86% respondents agreed that the LifeLines services were easily available to them. Almost similar number of people (83%) agreed that they used to get the services when these were needed most. They shared that they were not hesitant in asking questions with the KMs/VCs (75%) and were happy and satisfied with KMs/VCs (85%). Only 8% said that they were hesitant in asking questions.

3.11 Farmers perceptions about LifeLines technology and its continuance

On usefulness of LifeLines services the results revealed that 15% beneficiaries of the LifeLines



services opined that it was very useful, a sizeable number of about 43% said that it was useful, 30% said that it was somewhat useful, 5% i.e. 6 respondents of total 107 respondents said that it was not at all useful. 4 beneficiaries said the information received were useful but not applicable to their local conditions.

Fig. 6 Usefulness of Lifelines

But, interestingly, when asked about continuity of the services 93% respondents said that they were in favour of continuance of services. In the qualitative exercises farmers in unison said, '*pahle hum paramparic tarikon se kheti karte the, lekin Lifelines ke baad nayi-nayi cheezen pata chalihain jisse hamare under kheti ko lekar ummid jagi hain* (Earlier we used to practice agriculture with traditional methods but after Lifelines we came to know many new things and are hopeful towards agriculture).

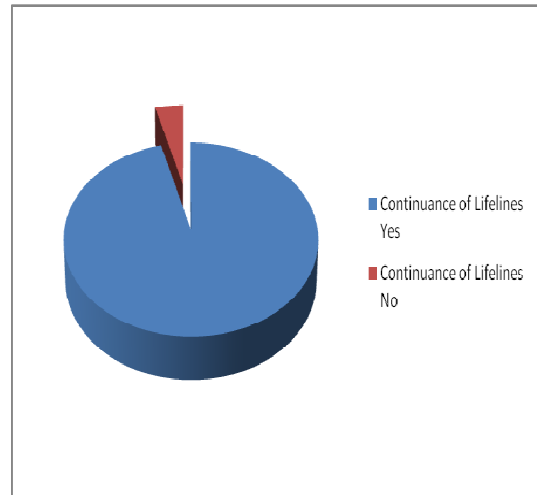


Fig.7 Continuance of Lifelines

3.12 Farmers suggestions for improvements in LifeLines services

The LifeLines users suggested ways to improve the existing technology, as follows;

- The queries must be answered soon and in proper manner
- LifeLines takes more than 24 hours to give reply though they should give reply at the same time
- Give this responsibility to a person who can inform every farmer door to door
- The answers should be given on SMS through mobile phone so that it costs us lesser
- Give good information about seeds, fertilizer
- The inputs on disease control, fertilizers and pesticides should be suggested as per the local availability

3.13 Use of LifeLines services by control group in future

The control group respondents were not using such services but admitted that they had problems in agriculture and livestock. About 88% farmers desired to use such services to take agriculture inputs, avail better information about agriculture and livestock rearing, crop disease treatment, animal diseases treatment, getting information at home, increasing the productivity and getting information as people get from LifeLines at home.

CHAPTER IV

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

4.1 Conclusions

The study has revealed many findings against the research questions posed in the study. The conclusions has been made keeping into considerations the objectives of the study.

4.1.1 Successful and Locally Relevant Technology

As per the findings impacts of LifeLines have been very encouraging if seen in relations to prevailing socio-economic realities of the region. In the given time frame of one year developing familiarity with LifeLines, its access and use might be regarded as the success criterions. The technology was found very relevant in the given socio-economic conditions of people and region.

The queries posed and inputs provided through LifeLines were found much diversified. It has supported the relevance and needs of such a technology/service in region. The sharing of impacts by the beneficiaries during qualitative exercises of LifeLines has further confirmed the roles of ICT applications in agriculture.

4.1.2 LifeLines leading to positive changes

The IRRAD target group has used technology and is willing to use it in future, too. The users of the technology have reported significant positive changes in their lives because of LifeLines. The structural arrangement of getting the technology to the people has been found very satisfactory. The availability of KMs/VCs has been a big boost to people.

4.1.3 The continuity and potentials of replicability for LifeLines

The findings of the study revealed that LifeLines has potentials for replicability because of the initial encouraging results and willingness of people to take it forward. The beneficiaries/farmers admitted positive changes on almost every aspect in their lives. Even, the control group respondents were aware about the meaningful roles the technology is playing and were eager to use such services. But the technology couldn't establish itself to the extent that it runs by its own rather a handholding support for smooth functioning and to get the technology deep rooted in the area among the community is needed.

4.1.4 Roles of IRRAD as intermediary organisation

IRRAD could establish a meaningful presence in Mewat and have created awareness about the LifeLines and IRRAD as an intermediary organization in introducing and facilitating the running of LifeLines. At the same time, the administrative, logistic, financial and programmatic dependence on IRRAD might prove a bane for sustainability of technology and developing a business model for same, if due and timely care is not taken to lessen the dependence.

4.1.5 The visible impacts

The users of LifeLines reported increase in their income because of the services they availed. The increase in income was further supported with the facts that the control group was deprived of the services offered through LifeLines and their annual income was significantly less than the LifeLines beneficiaries. The absence of LifeLines kind of services was felt very severely by the control group.

The positive impacts of LifeLines services on areas such as soil health, savings, earnings, decrease in loan borrowings, expenditure etc. was admitted by respondents. The findings were boosted further with the poor results on these areas in control group.

The impacts of the LifeLines services on education, skill enhancements and building intra-village social relations and increasing inter village networking could be seen. It might be

concluded that the LifeLines have adopted a holistic approach than simply focusing on agriculture needs.

4.1.6 The varied response of LifeLines

The usage of LifeLines services was quite varied among the beneficiaries and the perceptions of the beneficiaries on the usefulness of LifeLines services were not same across the board. Though, majority of the opinion falls towards the usefulness of services in varied degrees yet the reasons of the degree of usefulness gives rise to a ground for further strengthening the reach, accessibility, capacity buildings of KMs/VCs, delivery of services, quality and usefulness of responses/inputs etc.

The response time for the queries might have been amongst the possible reasons for infrequent and relatively less frequent use of LifeLines. Ideally there could have been more reliance on LifeLines because most of the respondents in both groups were neither aware nor using other similar services.

4.1.7 Accessibility of LifeLines

There were no issues with the accessibility of LifeLines services. The beneficiaries were found satisfied with the roles of KM/VCs and could develop a certain level of comfort to ask questions without any hesitation. The structural arrangements and man power deployments to serve the last mile by IRRAD have facilitated the smooth running of the LifeLines services.

4.1.8 Response time on posed queries

The suggestions made for the improvements of LifeLines services by the users clearly indicate the limitations in the existing services. The time taken in responding to the queries was not very desirable. In most of cases the responses to the queries were made in more than 24 hours which was not desired as far as the inputs on agriculture problems and issues were concerned. There are occasions e.g. the diseases in the plants, when the farmers need solutions to rectify the problems

immediately or in a desired time frame otherwise the crops might go waste. As the suggestions made by the farmers a 24 hour cycle seems to be a manageable time limit.

4.1.9 Gaps between queries posed and responses made

The other major concern expressed by the farmers was the ‘externalities’ of the inputs made. It was revealed that quite sometimes the medicines and pesticides suggested to control diseases were not available in local markets. It seems the languages and experiences of the local intermediaries i.e. the KMs/VCs are not getting synergized with experts. Unawareness of local context on parts of experts, also, seems to be among the immediate concerns because sometimes the suggestions made by experts were not found very applicable in local conditions.

4.1.10 Impacts of LifeLines services

The LifeLines have impacted its beneficiaries in many ways. Besides providing inputs for agriculture practices to improve livelihoods the LifeLines has indirectly impacted the socio-cultural aspects, as well. The impacts might be categorized as follows;

4.1.11 Impacts on rural livelihoods

One thing which very clearly emerged from the study was that use of technology was with the realization of the importance of technology. The user community i.e. the farmers reported positive changes in their human, physical, social, natural and financial capitals and LifeLines technology was received with a lot of enthusiasm and found very relevant. The reported increase in produce was most immediate and visible benefits to the farmers. It helped in restoration of their confidence in agriculture practices. Being near to the capital of the country, the farmers of the region are in better position to cultivate and sell cash crops especially vegetables. Some of the farmers shared that the inputs received through LifeLines helped them in growing vegetables and earning better than earlier.

The increase in produce helped them in better earnings and savings. They were in position to buy machineries for agriculture and create some assets and there was drastic decrease in loan borrowings.

4.1.12 The Contributions for research

The project has proved that ICT interventions with poor and marginalized are possible if due care has been taken of the community needs and their contexts. The methods and findings of the research might give leads to academic, research and practitioner communities to further build on these. The experience of project would help in developing manual and capacity building materials for stakeholders developing academic and research papers for peer reviewed journals besides disseminating to academic/research and practitioner communities at large.

4.1.13 Contributions towards overcoming structural, cultural and institutional limitations to ensure equal access to ICTs for rural communities

IRRAD has developed a good structural arrangement in the intervened area and man power deployments till the grassroots. The model applied for LifeLines interventions facilitated the equal access to technology to community members and farmers because the holders of the technology were the locally recruited and trained youths as KMs/VCs (farmers' friend). So, anybody having any query could very easily approach to pose and register their queries. Besides these, the KMs/VCs also played the roles of motivators and facilitators and enabled the farmers to realize the importance of technology in their lives in general and in the agriculture practices in particular.

The credibility of IRRAD in the community development as a result of ongoing need based development interventions also played a major role in receiving and acceptance of LifeLines. The socio-cultural and institutional barriers, which otherwise might have affected the deployment of the services, have been controlled. It has boosted the arguments in favour of socio-technical aspects of ICTs (Dearden and Rizvi, 2009) rather ICTs as a pure technical intervention.

4.1.14 Contributions towards enhancing local people's knowledge and capacities and strengthening existing knowledge networks

Prior to advent and use of LifeLines the farmers were using their own traditional and popular knowledge bases. At the most they used to go to the fertilizer and pesticide shops asking about the new fertilizers or pesticides which could be used in their farm practices. After Lifelines, farmers have been exposed and had chances of interacting with external knowledge centres and resources to ask questions on their problems and learning of new innovative practices happening elsewhere.

With the use of LifeLines technology the people are in process of learning new methodologies in agriculture. They are getting new inputs and their capacities are enhanced to some extent. The farmers who used the technology have very candidly admitted the enrichments in their knowledge and capacities.

4.1.15 The sustainability of the LifeLines interventions

The farmers reported that the technology is helping them greatly and as a result they were willing to pay the cost on running the technology. But, it was more of informal commitments on parts of the farmers; it is advisable to work out a business model for LifeLines to sustain it in long run.

4.2 Recommendations

The findings of the study helped in recognising the strengths of the LifeLines and its roles in the lives of the poor and technologically deprived farmers of Mewat. But, at the same time it also highlighted the areas which need further improvements to make the technology better and effective. The recommendations are made to bring a holistic improvement in the LifeLines services especially in the delivery of services, the response time for the queries made, enrichments in the current LifeLines, scaling of LifeLines etc.

4.2.1 Reducing response time

Two major limiting factors in LifeLines services as reported by users were ‘time taken in responding on the queries’ and ‘gaps between the farmers/KMs/VCs and the Experts’. There are other ICT projects in India and elsewhere which have taken care of these problems by identifying and introducing strategic new roles in the process (Dearden and Rizvi, 2008) to deploy locally for taking care of the gaps. Given the penetrations of telecom services and availability of internet services to the remotest place in India, IRRAD and OWSA should think of linking the services with web, as it would help in making the communications fast and enriched.

4.2.2 Bridging the communication gap

The communication gap between farmers/KMs/VCs and experts could be mitigating by making the availability of experts locally. It would be a good idea to appoint an agriculture graduate/postgraduate as the advisor with basic training in ICTs, locally. It would help not only in availability of timely inputs but also in bridging the gap between the farmers and external experts to bring new knowledge.

4.2.3 Enriching technical features in LifeLines

Given the advancements in areas of ICTs, the existing features related to telephonic advisory services in LifeLines seem to be limited. The LifeLines should enhance its applications by adding multi-media features and introducing 3G applications would further increase the relevance of the technology.

4.2.4 Management of technology and knowledge

For LifeLines services the server is placed at Mumbai without much access to local stakeholders. The project should think of having a local server to develop and manage the knowledge in the process. Currently there is no scope for sharing of knowledge generated locally. There is a need to encourage two way communications.

4.2.5 Building of capacities

The deployment of KMs/VCs is working well to facilitate the farmers but there is a need to capacitate the KMs/VCs on ICT related aspects as well.

4.2.6 Scaling up of LifeLines to non-IRRAD beneficiaries

The LifeLines had impacts on the non-users too. The respondents from control group had shown a lot of interest in LifeLines services. In future scaling-up they could be considered as the probable beneficiaries.

4.3 Limitations of technology

The findings revealed following constraints in LifeLines.

- The times taken in responding on queries were far more than desired, which de-motivates the farmers and importance of responses is lost.
- On significant number of occasions the responses made by experts on queries were found alien to farmers e.g. the prescriptions suggested to farmers regarding pesticides etc. are generally not found in the local market. So the advices to farmers from the experts are, sometimes, as good as no advice.
- Generally farmers and their representatives are not able to connect with the languages used by the experts. Also, the experts being not aware about the local realities and the agro-

climatic conditions and practices are not able to suggest ‘to the point and locally relevant’ solutions.

- The other limitation of technology might be low interactivity between the users/farmers and their representatives and the experts. The farmers are supposed to communicate through audio-phones without using multimedia. The current technology doesn’t provide platforms to create and use photographs and videos on their problems.

Notes

¹ The advance estimates of GDP Growth Rate (Factor Cost, 2004-05 Prices), *Economic Survey, Government of India, 2009-10*.

² The advance estimates of Growth Rate (Factor Cost, 2004-05 Prices) for Agriculture, Forestry and Fishing, *Economic Survey, Government of India 2009-10*.

³ World Bank, 2009. India: Priorities for Agriculture and Rural Development. (Web url: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSAREGTOPAGRI/0,contentMDK:20273764~menuPK:548214~pagePK:34004173~piPK:34003707~theSitePK:452766,00.html>)

⁴ IRRAD – ICT4RL Research Proposal to ENRAP – IDRC, 2009

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ANNEXURES

Tabular Representations of Results

Table 1: Primary Information on Respondents

S. No.	Blocks Covered	No. Of Beneficiaries/Respondents	Village Taken	No. Of Beneficiaries/Respondents
IRRAD Villages				
	Firozpur Jhirka	72 (67%)	Agon	38 (36%)
	Nagina	19 (18%)	Bhond	15 (14%)
	Tauru	16 (15%)	Pathkori	08 (7%)
			Raniyala	11 (10%)
			Goela	16 (15%)
			Karheda	09 (08%)
			Ghagas	04 (4%)
			Notki	03 (3%)
			Santhawadi	03 (3%)
			Kotla	00
Total		107		
Control Villages				
	Firozpur Jhirka	100 (69%)	Agon	58(40%)
	Nagina	29 (20%)	Bhond	18 (12%)
	Tauru	16 (11%)	Pathkori	11 (08%)
			Raniyala	12 (8%)
Total		145	Goela	17 (12%)
			Karheda	15 (10%)
			Ghagas	05 (3%)
			Notki	03 (2%)
			Santhawadi	05 (3%)
			Kotla	01 (%)

Table 2: Demographic Details

Variable	IRRAD Villages	Control Villages
Age		
Maximum	72	84
Minimum	15	19
Average	41	45
Sex		
Male	101 (94%)	136 (94%)
Female	06 (06%)	09 (06%)
Marital Status		
Married	98	135
Unmarried	7	04
Divorced	0	00
Widowed	2	05
Separated	0	00
Caste		
Brahmin	8	2
Meo-Muslim	62	112
Jat	1	0
Saini	24	14
Valmiki	0	1
Harijan	11	15
Others	1	0
Poverty Status		
APL	87 (81%)	112 (77%)
BPL	14 (19%)	33 (23%)
Educational Status		
Graduation and above	10	1
Above to high school (9 th & 10)-less than graduation	22	21
Junior High School (6 th to 8 th)	19	24
Primary (up-to 5 th)	15	11
Semi-literate (could read and write)	13	08
Illiterate	26	72
Degree in Urdu language	2	06
Others, specify	0	00

Table 3: Awareness about IRRAD Work

S. No.	Awareness Level		The Aware Programmes
	Yes	No	
IRRAD Villages			
	105	02	
The information Source			
Village Champions	52		
Kisan Mitras	84		
Panchayat	03		
Other Community Members	01		
Farmers	02		
Others	01		
Control Villages			
	119	24	

Table 4: Income and Expenditure Patterns

Variable	IRRAD Villages	Control Villages
Source of Income		
Primary	Agriculture: 95, Service: 06	Agriculture: 89, Service: 01, Migrant Labour:12
Secondary	Agriculture: 03, Service: 06, Other Labour Activities: 09	Agriculture: 08, Service: 00, Migrant Labour:04
Average		
Total Yearly Income (Average)		
Farmer	Rs. 99426	80979
Family	116673	85007
Total Yearly Expenditure		
Total	115725	82937
Heads of Expenditure		
Agricultural inputs (seed, manure etc)	33712	25762
Social occasions (marriage, other social gatherings, funerals)	29901	17402
Health	10554	9846
Education	13853	8614
Food	26384	22868
Alcohol/cigarettes/beedis	4598	3806
Household Items	7798	5590
Others/specify	21231	8697

Table 5: Usage of Lifelines Technology Services

Frequency of Usage	IRRAD Villages	Control Villages
Once in a week	21 (20%)	Awareness about Lifelines Services
Once in a month	27	Yes No
Once in three months	17	04 136
Twice a year	08	In yes: Kisan Mitras, Fellow farmer
Never asked	04	
Others (specify)		
Only one time	2	
With no certain time	15	
One in a year	6	

Table 6: Time taken in Responding on Queries

Time	IRRAD Villages	Control Villages
Then and there	00	
Same Day	00	
1 to 2 Days	77	
About a Week	14	
More than a Week	01	
Didn't get a Reply	12	

Table 7: Awareness and Use of other similar Services

S. No.	Awareness and Use		The Aware Programmes
	Yes	No	
IRRAD Villages			
Awareness			
	04	83	Haryana government gives free call facilities for farmers Government Krishi Kendra
Use			
	02	34	
Preference of Services (the Better One)			
Lifelines		Other Available Services	
2		1	
Control Villages			
Awareness			
	04	125	No response
Use			
	00	44	
Preference of Services (the Better One)			
Lifelines		Other Available Services	
No response were given			

Table 8: Impact of Lifeline services on Farmers Livelihood

Table 8.1: Soil Health

S. No.	Impacts		The Aware Programmes
	Yes	No	
Experimental Group			
	66		36
The Changes		Reasons for Change	
Soil Quality has increased	62	<ol style="list-style-type: none"> 1. The productivity has increased 2. Control in crop diseases 3. Better soil - Majority 4. Use of fertilizers 5. Use of pesticides 6. Increased produce 7. Use of Micro-nutrients 	
Soil Quality has decreased	03		
Others (Specify)	08		
Control Group			
Any positive or negative change in the health of the soil in the last one year			
	Yes	No	
	45	93	
The Changes		Reasons for Change	
Soil Quality has increased	13	Productivity has increased due to increased in irrigation Soil quality has improved because we had put muck manure The soil quality has improved because of good fertilizer , gypsum, zinc Soil quality has increased because of good fertilizer	
Soil Quality has decreased	34	The soil quality has decreased due to shortage of water Tomato Crop destroyed due to insect Soil quality has decreased because of the water level is low Shortage of Water	
Others (Specify)	00		

Table 8.2: Change in the Area of Cultivable Land

Experimental Group		
The Changes		Reasons for Change
Area of cultivable land has increased (how many Acres)	08	1. Medicine Use 2. Good Crop
Area of cultivable land has decreased (how many Acres)	00	3. Land purchase 4. Increased productivity 5. Increased land
No Change	82	
Control Group		
	03	02
The Changes		Reasons for Change
Area of cultivable land has increased (how many Acres)	03	Increased land
Area of cultivable land has decreased (how many Acres)	02	
No Change	128	

Table 8.3: Impact on Agriculture Produce

Experimental Group		
The Changes		Reasons for Change
Increase in yield (agricultural produce) (how many Quintals)	71.96% (72) Average: 2.86 Quintal Maximum: 15 Quintal Minimum: 0.10 Quintal	<ol style="list-style-type: none"> 1. Increased productivity 2. Control in crop diseases 3. Better soil 4. Use of fertilizers 5. Use of pesticides 6. Use of Micro-nutrients
Decreased in yield (agricultural produce) (how many Quintals)	No decrease reported	
No Change	32	
Control Group		
The Changes		Reasons for Change
Increase in yield (agricultural produce) (how many Quintals)	11.72% (17) Average: 3.70 Quintal Maximum: 20 Quintal Minimum: 01.00 Quintal	<ul style="list-style-type: none"> Increase in cultivable land Use of good seeds and fertilizers Good rain Agriculture inputs
Decreased in yield (agricultural produce) (how many Quintals)	24 Average: 3.32 Quintal Maximum: 25 Quintal Minimum: 01.00 Quintal	<ul style="list-style-type: none"> Marriage Water Supply is not good Failed crop Shortage of water Termite Heavy blow of air and heavy rain Dead land Crop diseases
No Change	38	

Table 8.4: Impact on Savings

IRRAD Villages		
Experimental Group		Reasons for Change
Increase in Savings	72	Increase productivity Disease control as a result of lifeline services Inputs received through Lifelines increase productivity IDRC
Decrease in Savings	02	
No Change	31	
Control Group		
The Changes		Reasons for Change
Increase in Savings	27	Because of area of cultivable land has increase, Use of good seeds and fertilizers Good rain Agriculture inputs
Decrease in Savings	66	Marriage Water Supply is not good Failed crop Shortage of water Termite Heavy blow of air and heavy rain Dead land Crop diseases
No Change	47	

Table 8.5: Impacts on Borrowing of the Loans

Experimental Group		
The Changes		Reasons for Change
Increase in Borrowing Loans	05	Good productivity because of Lifelines Services IDRC
Decrease in Borrowing Loans	31	Increased income Saving
No Change	71	
Control Group		
The Changes		Reasons for Change
Increase in Borrowing Loans	24	Failed crop Decreased production Marriage Crop disease No work Increased expenses
Decrease in Borrowing Loans	05	Increased productivity Good profit
No Change	111	

Table 8.6: Impacts on Earnings

Experimental Group		
The Changes		Reasons for Change
Increase in Earnings	72	Use of new methods
Decrease in Earnings	02	New knowledge and inputs from Lifelines Good productivity because of Lifelines Services IDRC Increased income Saving
No Change	30	
Control Group		
The Changes		Reasons for Change
Increase in Earnings	31	Because of area of cultivable land has increase, Use of good seeds and fertilizers Good rain Agriculture inputs
Decrease in Earnings	57	Marriage Water Supply is not good Failed crop Shortage of water Termite Heavy blow of air and heavy rain Dead land Crop diseases
No Change	53	

Table 8.7: Impacts on Expenditure

Experimental Group		
The Changes		Annual Increase in Expenditure
Increase in Expenditures	29% (32)	Agricultural inputs (seeds, fertilizers etc): 57 Average increase: Rs. 5404
Decrease in Expenditures	27% (29)	
No Change	36% (39)	
Control Group		
The Changes		Annual Increase in Expenditure
Increase in Expenditures	61% (88)	Agricultural inputs (seeds, fertilizers etc) Due to high prices of seeds, fertilizers Inflation Marriage Expenses increased because of purchasing domestic goods Expenses increased due to purchasing of seed and fertilizer
Decrease in Expenditures	4% (06)	
No Change	34% (49)	

Table 8.8: Impacts on Assets Building

Experimental Group		
The Changes		Reasons for Change
Increase in Assets	11	Increased assets, Bore well, Tractor, Purchased house Purchased 16 Bigha Sold Buffalo Sold camel
Decrease in Assets	05	
No Change	83	
Control Group		
The Changes		Reasons for Change
Increase in Assets	07	No responses
Decrease in Assets	05	
No Change	129	

Table 9: Lifelines Services Bringing Changes in Health

Variable	Experimental Group		Control Group	
	Yes	No	Yes	No
Brought Changes	74% (79)	24	21	118
The Changes				
Better Nutrition	61		14	
Increased Work Productivity	28		05	
Ability to perform domestic chores better	28		02	
No of visits to doctor decreased (less expenditure on health)	48		02	
Increase in Income	51		11	
Any Other, specify	01		00	

Table 10: Lifelines Services Bringing Changes in Skill Enhancement

Variable	Experimental Group		Control Group	
	Yes	No	Yes	No
Brought Changes in Skill Enhancements	66% (71)	30% (32)	6% (09)	89% (129)
In case of yes				
Learnt a trade	40% (43)		01	
Diversified Livelihoods	43% (46)		01	
Others (specify)	04		00	

Table 11: Lifelines Services Bringing Changes in Education

Variable	Experimental Group		Control Group	
	Yes	No	Yes	No
Brought Changes in Education	56% (60)	37% (40)	29% (42)	68% (99)
In case of yes				
Increase knowledge about new agricultural practices, technology, seed, fertilizers etc	54		01	
Sending children to school	29		24	
Sending children to better school	31		17	
Sending children for higher studies/colleges	23		09	
Other, specify	00		00	

Table 12: Lifelines Services Increasing Social Networking or Building Social Relations/Ties with Other Fellow Farmers/Kisan Mitras

Variable	Experimental Group		Control Group	
	Yes	No	Yes	No
Increased Social Networking	67% (72)	12% (18)	29% (39)	61% (88)
In case of yes				
Mutual trust and support between fellow farmers and Kisan Mitras	64% (69)		13% (19)	
Increase in collective participation in village economic and social activities	27% (29)		4% (06)	
Increase co-operation amongst fellow farmers	45% (48)		18% (26)	
Other, specify	01		00	

Table 13: Lifelines Services Increasing Inter Village Networking

Variable	Experimental Group		Control Group	
	Yes	No	Yes	No
Increased Inter-village Networking	53% (57)	42% (45)	8% (11)	86% (125)
In case of yes				
Agriculturalist/farmers	46% (49)		07	
Block officer	5% (06)		03	
Kisan bazaar	30% (32)		04	
Linkages with external vegetable stores and markets	23% (25)		06	
Any other	00		00	

Table 14: Areas in Questions were asked using Lifelines Services

Areas	Experimental Group	Control Group (from other sources)	
Agricultural inputs (machines etc)	30% (32)	01	
Price (seeds, agricultural produce	43% (46)	03	
Information about the seeds, pesticides	60% (64)	08	
New agricultural technology	48% (51)	07	
Crop and animal diseases and control	68% (73)	07	
Marketing of agricultural produce	28% (30)	01	
Any other (specify)	6% (07)	107 (Not Taken)	
		Impacts	
		Yes	No
		12	28
		In case of yes;	
		Increase in agricultural produce - 07	
		Crop disease control - 05	
		Purchase of tractors/other machinery - 00	
		Increase scientific knowledge of crops, new seeds, machinery - 03	
		Reduced incidence of diseases amongst animals/better health of animals - 00	
		Increase in milk production - 01	
		Other, specify - 00	

Table 15: Impacts of the Information Availed through Lifelines Services

Variable	Experimental Group		Control Group	
	Yes	No	Yes	No
Impacts of the Information Availed through Lifelines Services	75% (80)	22% (24)	This question was not posed with control group respondents	
	In case of yes			
Increase in agricultural produce	63% (67)		This question was not posed with control group respondents	
Crop disease control	67% (72)			
Purchase of tractors/other machinery	14% (15)			
Increase scientific knowledge of crops, new seeds, machinery	44% (47)			
Reduced incidence of diseases amongst animals/better health of animals	37% (40)			
Increase in milk production	26% (28)			
Other, specify	.93% (01)			

Table 16: Accessibility of Information

1.	Variable	Experimental Group		Control Group	
		Yes	No	Yes	No
	Getting Information when Needing Most	83% (89)	16% (17)	This question was not posed with control group respondents	
2.	Easy availability of Lifeline information services	86% (92)	11% (12)		
<p>In case of no, the constraints –</p> <p>No land</p> <p>We have not received information in proper way</p> <p>The questions were not answered</p> <p>No timely information</p> <p>No answers</p> <p>No direct interaction</p>					
3.	Are you hesitant in asking questions from Lifelines Technology services?	8% (09)	75% (80)	This question was not posed with control group respondents	
<p>In case of yes, the reasons:</p>					
4.	Are you happy with the people/service providers of Lifelines Technology services?	85% (91)	12% (13)	This question was not posed with control group respondents	
<p>In case of no, the reasons:</p> <p>The questions were not answered at the same time</p> <p>questions were not answered</p> <p>no information</p> <p>Lifeline takes 24hrs to give the reply though they should give reply at the same time.</p>					
5.	Do you think that lifeline services have brought changes in your life?				
		82% (88)	17% (18)	This question was not posed with control group respondents	
In case of yes, the Changes					
	Timely technical inputs(use of fertilizers pesticides watering etc)	47% (50)			
	Control of diseases (livestock	79% (84)			
	Increased crop yield/ milk and meat production	27% (29)			
	Others (specify)	7% (08)			
In case of no, the reasons					
	Information coming late	00			
	Information provided was unsatisfactory	04			
	Information not applicable in our area / Information can't be utilized in our area	05			
	Others	00			

Table 17: Farmers Perceptions about Lifelines Technology

Areas		Experimental Group		Control Group	
From farmers' experience usefulness of the advices received through Lifelines?					
Very useful		15% (16)		This question was not posed with control group respondents	
Useful		43% (46)			
Somewhat useful		30% (32)			
Not at all useful		5% (06)			
Information is useful but not applicable (irrelevant information)		4% (04)			
Variable		Experimental Group		Control Group	
2.	The favour to continue Lifelines Services	Yes	No	Yes	No
		93% (100)	4% (04)	This question was not posed with control group respondents	
<p>Reasons</p> <p>YES:</p> <p>Life line technology useful to us</p> <p>Life lines gives good knowledge about crops at home</p> <p>We have received information by life lines</p> <p>The crops disease has controlled because good knowledge of lifelines</p> <p>Farmers get proper knowledge by lifeline without consulting to doctors</p> <p>Knowledge at Doorstep</p> <p>Lifelines knowledge leads to benefits</p> <p>Treatment of diseases</p> <p>To grow more tree and get better fruits</p> <p>NO:</p> <p>No Need life line technology</p> <p>Lifeline takes 24hrs to give the reply though they should give reply at the same time.</p> <p>They should give reply at the same time</p>					

Table 18: Farmers suggests for improvements in Lifelines Services

Variable		Experimental Group		Control Group	
	Wish to suggest for improvements in Lifelines Services	Yes	No	Yes	No
		96	04		
Suggestion:					
The queries must be answered soon					
They should give information In proper way and at the same time and the call should be free					
The knowledge of lifelines should be provided to every villager.					
Lifeline takes 24hrs to give the reply though they should give reply at the same time.					
Give this responsibility to a person who can inform every farmer door to door					
The answers should be given on SMS through mobile phone so that it costs us lesser in value					
Give good information about seeds, fertilizer					

QUESTIONS WITH CONTROL GROUP ONLY**Table 19: Use of Lifelines Services**

s. No.	Use of Lifelines services	Use	
		Yes	No
		00	145

Table 20: Interaction with others to Seek Agriculture information

s. No.	Stakeholders	Interaction	
		Yes	No
	Village Champions	09	
	Kisan Mitras	18	
	Panchayats	03	
	Other community members	52	
	Farmers	10	
	Others	00	

Table 21: Problems with Farming/Livestock in The Last One Year

s. No.	Have you had any problems with farming/livestock in the last one year?	Interaction		
		Yes	No	
		63% (91)	34% (50)	
Problems: Water Supply is not good, Failed crop, Shortage of water, Termite Heavy blow of air and heavy rain, Dead land, Crop diseases				

Table 22: Use Of Mobile Services Like Lifelines Technology for Seeking Solutions for Agricultural/Livestock Problems in Future

s. No.	Use of mobile services like lifelines technology for seeking solutions for agricultural/livestock problems in future	Response	
		Yes	No
		88% (128)	10% (14)
Reasons: To take proper suggestion, To take agriculture inputs, To avail better information about Agriculture and livestock rearing, Crop disease treatment, Animal diseases treatment, To get information at home, To increase the productivity, Getting information as people get from Lifelines at home			