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# **The life long learning of farmers (L3F) through mobile phones: Pedagogy for the commons**

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## **Abstract**

Hierarchy and disparity in India are deeply embedded and reflects in the daily life of the people. The result is the lower your position the less you were entitled to own, to participate, to move around etc. Mobile phone undermines these strictures, which is increasingly becoming ubiquitous, plugging a large mass, in to a system of interactive communication. Mobile can be used as an effective learning tool but it depends on the knowledge, skill and the resources of the person using it. Life long learning of farmers (L3F) programme started seven years back in Theni district, in the state of Tamil Nadu, India, supported by Commonwealth of Learning (COL) and implemented by a network of Civil society organizations and Farmers producer companies. The programme has been effectively using mobile as a tool to address the women and men farmers learning needs i.e to provide lessons for the better management of the enterprises they set up with the loans received from the commercial banks. It converted everyone as a self directed learner. The L3F learners are small and marginal, illiterate, semiliterate women and men farmers. The paper discusses the processes, outcomes and impact of L3F. The study conducted in 2013 by National Institute of Bank Management, Pune, shows the Benefits/Costs ratio, for each one rupee spent nearly ten times more were returned as benefits. Similarly another study conducted by Business School, New England University, Australia in 2016, reveals the ‘profit efficiency’ achieved in programme is higher in the case of L3F farmers. The paper will also discuss the future directions of the programme including the possibility to promote L3F as a business model for banks and other stakeholders.

## **1. Introduction**

1.1 Hierarchy and disparity in Indian society are deeply embedded and reflects in the daily life of the people. The history of the emergence of the rigid social hierarchy traced back to the ancient time and continues till the present day. The result is the lower your position the less you were entitled to own, to participate, to occupy societal position, to move around etc. Mobile phone to certain extent undermines these constraints, which is increasingly becoming ubiquitous, plugging a large mass, in to a system of interactive communication. This led them to have independent access to information and increased their communicative network. Mobile can be used as an effective learning tool but it depends on the knowledge, skill and the resources of the person using it.

1.2 The Life Long Learning of farmers (L3F) project was started seven years back in 2009 in Theni district located in the south west of the state of Tamil Nadu in South India, the project activities of L3F has been implemented in the blocks of Uthamapalayam and Chinamanur blocks of the district. The project was supported by Commonwealth of Learning (COL) and implemented by Vidiyal a NGO and a network of Civil society organizations actively working with the local communities. The region is agriculture based, more than half of the farmers are (69%) small and marginal holders and nearly half of the population is agricultural labourers (47.28%). Invariably people in the region believe the income from animal husbandry supports the family and manage the financial condition of the family especially

when there is a crisis. Gender disparity in literacy rate shows nearly 30% of the females in the district are illiterates.

1.3 According to COL's strategic plan 'Learning is more than formal education. It can take place in non-formal and informal settings and can continue throughout life. Technologies have made it possible to make learning ubiquitous' and COL recognizes the role of education and learning as an important step towards achieving sustainable development COL believes that modern ICTs can help in addressing the issue of massive learning needs of the farming communities and reaching the farming and other marginalized communities in a spatial temporal context and facilitate a self-directed learning (Strategic plan 2015 -21, COL).

1.4 L3F project has been effectively using mobile as a tool to address the women and men farmers learning needs i.e to provide lessons for the better management of the enterprises they set up with the loans received from the commercial banks. The L3F learners are small and marginal, illiterate, semiliterate women and men farmers. With more than 80 per cent of farmers in the region are cultivating an area of two acres or less, which hardly provide livelihood security, it is felt that there is an increasing and continuous need for training, skill and capacity building, information access and also access to capital to promote both on-farm and non-farm activities.

1.5 The poor and scattered farming and agricultural communities busy in their small family farms or working as wage labourers in others farms, do not have the time and resources to invest in learning as per the needs and participate in the trainings. More over the opportunities created by the government and other organizations like NGOs working in the area are very limited. Gender disparity is the other factor which keeps rural women away from using the limited opportunities. Life long learning of farmers (L3F) programme of COL attempts to fill up this gap through result based actions at the community level. In L3F Open and Distance Learning (ODL) using farmer friendly ICT- tools such as mobile phone is proposed as an alternative method. In order to see lifelong learning at work, the control over decisions about learning objectives and goals should be managed by individuals themselves rather than others setting objectives ( Fahad Aizaz.S.M et.al)

## **2. Mobile based L3F for the livelihood security of the rural poor**

2.1 Community based village level groups such as Self Help Groups, Federations of Self Help Groups, and Farmers associations were identified as local partners to execute the L3F project activities in collaboration with Vidiyal. The members of the SHGs are connected through strong trust based relationship, meeting regularly, guided by an experienced and committed leadership and share equal opportunity. The project is converting the members as a self directed learner.

2.2 Comparing with other ICT tools, mobile phone is the most widely used device in the region. India has 1026.66 million mobile subscribers as of April 2016. The enabling environment in terms of government policy on telecommunication is contributing the fast growing market and usage of mobile phone in India. On the use of mobile technology in rural India Tenhunen (2008) says that appropriation of phones in the rural areas shapes social logistics, increase the efficiency of market, facilitate alternative political pattern and help the women to broaden their culturally constructed spheres. Mobile phones are important tools for enhancing the lives of women in low- and middle-income countries.

2.3 Vidiyal works with the rural women and men farmers, has been working in the region since 1985. Vidiyal mobilizes rural women farmers in the form of Self Help Groups (SHGs) around 250 SHGs with 4500 women as members, these SHGs were federated as Vidivelli a community based organization. Vidivelli continuously supports the members to get credit linkage with the commercial banks and also to provide credit support with low interest rate from its own source. These women members are mostly from

agricultural labour families and some of them are from small and marginal holders. Majority of them are illiterates or semi literates. Vidivelli is managed by a group of experienced women leaders of the SHGs.

2.4 Women members of the SHGs are the active learners of the L3F project; these women members' prioritized goat rearing and managing milch animals as the most suitable economic activities. They get credit support to buy goats or milch animals from the commercial and cooperative banks operating in the region based on the business proposals they submit to the banks in which the groups maintain the savings account. In some cases the SHG Federation also supports if the members need extra capital with low interest rate.

2.5 The banking sector in the developing world is looking for strengthening the rural credit. It is generally believed that the performance of rural credit is being hampered by large non-performing assets (NPA). In recent times, the experiences from the rural areas show that SHGs not only offer advantages of scale in terms of transaction cost but also have shown lowering NPA rates.

2.6 Before apply for the loan Vidiyal identifies the SHGs which are interested to borrow loan, train the women members of the SHGs to develop the business proposals and the proposals are submitted to the banks. The bank accepts the proposals and supports the women farmers for buying goats and milch animals; in the total cost the cost of a low priced mobile phone is also included. The loan amount received for goat rearing is Rs.43, 000 (660 US \$) to get nine female and one male goat and for milch animals Rs. Rs.60, 000 (925 US \$) for two animals, the farmer gets the first animal immediately after the loan amount is sanctioned and the second installment after six months for buying the second animal.

2.7 Banks provide the financial capital to start any one of the enterprise mentioned above based on the proposal submitted, L3F implemented by Vidiyal supports the learning for the better management of the enterprises through mobile phones on daily basis. Through such continuous learning process the community members were able to raise the goats or manage the milch animals in a scientific manner with better productivity and profitability.

2.8 The mobile phone is used as a learning tool, a green sim card provided by IKSL – Air Tel telecom service provider helps the farmer to get access to the L3F exclusive mobile network. The women who buy and manage goats or milch animals with the credit support from the banks receive the voice mails thrice a day. They appreciate the technology which facilitates the learning with suitable contents in the real life situations. The voice mails lessons are prepared based on the need analysis done by SHG leaders and Vidiyal staff periodically, the feedback received from the learners in the SHG meetings and other review meetings conducted by Vidiyal were also considered for the preparation of the lessons. There is a built in provision to repeat the voice mails if the listener faces difficulty to understand when he hears the first time.

2.9 Till now Vidiyal has prepared around 6000 voice mails as learning materials on several topics covering both goat rearing and management of milch animals. For preparing the voice mails Vidiyal takes the support of the experts from veterinary universities and extension/training centres and subsequently the content is validated by another expert before it is finalized. These voice mails are shared with a team women learner to decide the style and to find and use the appropriate word for the easy understanding of the learners.

2.10 In SHG meetings, the women members were trained to make calls, how to operate and safely keep the mobiles. The training starts with how to press the buttons and which button to pick up the call and which one the learner needs to press to disconnect the call. Majority of the women are illiterates with a tight daily routine with multiple tasks with mobility in their day to day life. Considering these factors the women feel mobile phone based learning is the most appropriate option.

2.11 Discussion on the voice mails received is one of the regular agenda in the SHG meetings. At the next level the leaders of the SHGs discuss about the voice mails in the SHG cluster meetings. The member who receives the loan only gets mobile phone and has the opportunity to become mobile learner. The mobile owners/learners in the group share the information received with the non mobile owners. These meetings provide the women an opportunity to discuss the messages received, clarify their doubts, fix the information in the existing knowledge system etc. Sometimes women learners are unable to comprehend the message heard, the facilitation of horizontal learning in the SHG meetings, cluster and federation meetings help to clarify their doubts and get clarity on the voice mails received.

2.12 The discussions are not only taking place in the SHG and cluster meetings, but in the work places of the women, this provides an opportunity for the other non mobile owners work in the same place to hear the voice mails and know the contents and participate in the discussion. Apart from the SHG and cluster meetings women mobile owners interact with the other women learners to confirm, cross check, and also clarify certain things this makes the women to engage with the fellow learners and discuss.

2.13 Sharing and learning in such a social network becomes a social process. Social capital helps for learning, creates way for new ideas and changes and enhances the scale of outreach. Enabled people in the network are vibrant points and active facilitators in the sharing and learning process. In the context of community learning, development of conscious and innovative “conversational spaces” could lead to creative learning and expand the knowledge domain of the community with new and innovative ideas.

2.14 The learning process is informal facilitated by Vidiyal, the objective of learning is specific in a particular spatial and temporal context to meet the needs of the learners and changes continuously to meet the learner’s requirement based on the stages of the enterprise, or crop season etc. The flexibility in the learning method allows both the facilitating organization and learner to share the objectives and change the objectives as per the requirement of the self directed learner.

2.15 In the domestic context the entire family supports the learning objective of the woman, it is like a norm that if other family members hear the voice mail such as the son, daughter, or husband, they immediately share the information with the woman and help to learn the content. Repetition improves the learning, helps the learners to gain more clarity and confidence to use the information in the real life situation. Some of the really relevant and important information based on the learners request are repeatedly sent for several times. Similarly some of the information which are new and unfamiliar to the learners are repeated several times to help them to understand and learn.

2.16 The style and language used in the voice mails make the women to feel extremely comfortable and motivated to participate in the learning, hence illiteracy is not considered as a constrain. Portability of the tool and the flexibility of time (can be fixed according to their free period of the day, not in the morning and the evening when they are busy with household activities) in receiving the voice mails are the other major advantages, they hear the voice mails while cooking in the kitchen, going for grazing ground, attending self help group meeting, visiting the local market etc. In the mobile learning portability of the instrument is considered as the most distinctive aspect which distinguishes mobile from other ICT technologies. Learner is not fixed in the already decided venue for the learning programme planned.

2.17 As a recent development in the phone book the learners added pictures next to the numbers of the selected individuals like veterinary doctor, bank manager, SHG leader, SHG cluster leader, goat agent, NGO staff etc. They remember the picture and relate the number/name of the person and make call. Slowly the literate farmers are learning to send text messages to communicate with others, text messages are free and help the learners to avoid the cost of calling if it could be managed with text message.

2.18 The mobile learning methods helped the farmers/learners to increase the knowledge and skills about disease management, new practices which helps to improve the productivity, access to veterinary and market facilities etc. The L3Farmers have now introduced stall feeding in the goat rearing; they feed the goat with homemade feed and green fodder daily apart from grazing in the open areas. The other major impact created due to continuous learning is knowledge and skill development, this has reduced the kid mortality as zero, which is a major issue the farmers face and unable to find solution.

2.19 Access to technology has helped women to have the space in the area of marketing, efficient handling of information is visible while individual women market their goats or milch animals in the market. In selling the goats, they get the real time market price through mobile calls which enable them to negotiate and do better business. The women use the mobiles to get the rates from different markets and also instantly cross check the rate with other agents and their own community members who recently sold in the market. Previously they were totally dependent on the local agents and bargain without the knowledge about the different market rates. Now women share the responsibility of marketing the goats which was a male activity in the past. Confidence and mobility of the women farmers have increased enormously. This has increased the social status of women with in the domestic and public spheres.

2.20 Although mobile learning is the primary learning method adopted, to strengthen the learning process, the NGO has been using other methods like CD based learning (content-rich multimedia materials) and simple print based learning materials on a set of topics the learners are interested. Videos are screened in the SHG meetings, and printed materials are circulated to the learners, during the regular review meetings conducted by the NGO.

### **3. Outcome and impact assessment of L3F**

3.1 National Institute of Bank Management (NIBM), Pune conducted an independent study in 2013 and assessed the outcomes and impact of L3 project among women farmers who received credit from the commercial banks for milch animals and involved in the continuous learning programme. The average net returns have been quite high for L3F borrowers (INR 2, 32,527) as compared to INR 1, 31,850 for non-L3F borrowers. This clearly suggests that the L3F borrowers have greatly benefited in terms of return on investment.

3.2 The L3F borrowers were very regular in their repayment of bank loans and there are no non-performing assets. Banks earns much higher income from L3F borrowers as compared to non- L3F borrowers. The average incomes across the L3F and non-L3F borrowers' accounts have quite a big difference – INR 84,923 (1307 US \$) and INR 9,223 (142 US \$), respectively. The cost-benefit ratio (CBR) of L3F project is 10.01, which indicates that for each rupee spent on the programme, Rs 10.0 is generated as return benefit from the project. The Rate of Investment on L3F project was 901 per cent on dairy enterprises; i.e. the programme yielded Rs 9.01 for every rupee that the L3F project cost for the dairy enterprise development.

3.3 The study results also reveal that the L3F members have made considerable progress economically and are sustainable in their business management. Created higher asset value, incur low management costs in running the enterprises; consume increased level of nutritious food.

3.4 Another independent study conducted by Business School, New England University, Australia in 2016, reveals the 'profit efficiency' achieved in L3F programme is higher in the case of L3F farmers. L3F dairy farmers have produced more milk per animal compared to SHG and Non-L3F-Non-SHG farmers. Expenses of running dairy farming are higher by a significant magnitude on average per animal for Non-L3F-Non-SHG farmers compared L3F and SHG farmers. Profit per animal on average is twice for L3F

farmers compared to SHG farmers, while the Non-L3F-Non-SHG farmers have on average incurred a loss of Rs. 5000 per animal.

3.5 Empirical analysis of factors influencing dairy production and inefficiencies is undertaken with stochastic frontier analysis. Empirical analysis shows that younger participants in L3F benefit more leading to an improvement in the efficiency of dairy operations. Analysis also indicates that L3F participation is helpful for dairy farmers as it makes formal education more relevant for dairy farming. Longer participation in SHGs has no influence on the cost inefficiencies of SHG and Non-L3F-Non-SHG farmers. Five or more years of participation in L3F on the other hand, leads to reduction in cost inefficiencies of L3F farmers.

#### **4. Conclusions**

4.1 Technology is an enabler, integrating it in to teaching and learning enhances the learning experience. The use of technology does not automatically result in effective teaching practices and deep meaningful learning unless effective pedagogical use of the technology is practiced (Ng'ambi, 2013). In this sense in L3F mobile phone has been effectively used to support the learning of the illiterate and semiliterate farmers to build the capacity among farmers in developing value-added farming and ensure livelihood security.

4.2 All learners of L3F project are SHG members, the learning process is placed in a social network, sharing of the learnings regularly takes place among the members in the SHG and Cluster of SHGs meetings with other members who are not in the learners network, this social process facilitates the horizontal learning among the women farmers of the region.

4.3 The control over decision about the learning objectives, timing for receiving the lessons is with L3F learner community. Learners having control over the learning objectives is the biggest advantage in the mobile learning. In terms of handling and message reception the women farmers in rural areas find the low cost mobile phones more convenient to engage in the learning process, hence mobile technology is socially acceptable, economically feasible and financially viable.

4.4 In general due to various reasons/barriers such as cost, affordability, coverage, difficulty to approach agents, trust, technical literacy, social norms and confidence women in the low and middle income families particularly in the rural areas are not using mobile phones. But in the case of L3F all mobile learners are women, they own mobile phones; this has helped in the micro context to reduce the gender disparity in mobile phone ownership between men and women which is universal and sustaining till date.

4.5 In terms of cost the mobile phones are relatively cheap compared with other ICT based devices used for open and distance learning, the low cost involved in the method provided more scope for sustainability and scalability of the practice.

4.6 One issue the women learners and concerned and needs serious attention is the increased work load on their daily routine and added responsibility of these women learners. Previously they used to wake up at 6.am in the morning and now they start the day at 4.00 am, and hardly get any rest time during the daytime. Moreover, this has increased the responsibility of the women farmers; to manage the credit and repayment of the loan to self help groups and the banks. The issue raised here needs further detailed investigation to arrive concrete conclusions and solutions.

4.7 Recently the goat rearing women farmers have registered a company called 'Women goat rearers Producer Company' with around 1000 shareholders each shareholder had paid Rs.1000 (15 US \$) as her share, the shareholders were distributed share certificates. The company has developed a business plan for

next five years. The group members now involved in direct marketing and running village level meat shops. Vidiyal has developed a learning material to promote corporate literacy among the leaders and the share holders of the company the major topics such as Introduction to Farmers Producer Company, roles and responsibilities of shareholders, roles and responsibilities of directors, governance system etc. The information got converted in to voice mails and used in the mobile learning. The company has submitted an application for equity grant to Small Farmers Agribusiness Consortium (SFAC), an organization managed by Government of India.

4.8 Access to mobile, a source of learning and communication owned by the women has subtly enhanced the power to negotiate with the men folk. The cumulative result of continuous learning, skills, knowledge developed and new experiences gained, building new assets, improved ability etc has triggered to reorder the society towards achieving gender equity. The project has demonstrated that ‘the transition from silence to voice, from powerlessness to empowerment is possible in non-formal learning contexts, just as it is in formal contexts, and that technology offers a means to accelerate this process if the use of technology is placed in an appropriate social context’ (K.Balasubramanian et. al).

4.9 The study conducted by NIBM has strongly suggested that there is a need for banks to invest in ICT-based training and knowledge sharing methods, which will save money and time of bankers and effectively benefit the participants in its implementation. The other study on profit efficiency also proves the strength of L3F project, how continuous learning has created a positive impact on productivity and profitability of the enterprise. The Vidiyal NGO with the support COL is negotiating with the commercial banks to collaborate and test the model in certain pockets as a pilot project where the banks are operating, based on the pilot results the banks can take certain policy decisions to scale up L3F at the state and national levels.

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