

Developing ICT platform for enhancing agricultural productivity: The Case Study of EID Parry

B. Bowonder and Yelwender Yadav

Abstract

India traditionally is an agrarian economy, where even today 40% of the country's GDP is derived from agriculture and agriculture products. Lately the Indian farmer community was not exposed to the use of ICT for its well-being, but since the Indian private sector has entered the arena, the acceptability of the latest innovations and tools by the farmer has increased.

EID Parry, the group company of Murugappa Group, is one of the pioneers in the pesticides and agro-products. It was the first company to start sugar mill in India. The company launched the Parry's Corner ICT initiative to derive the synergies from its vast experience and the farmers knowledge pool. The spread of the information kiosk was limited to the paddy and sugarcane clusters in Tamil Nadu. Parry's Corner was pivotal in increasing the yields and reducing the expenditures for the farmers. Farmers here are able to access wide range of information from the information kiosk's such as the climatic conditions, knowledge about the urea, fertilizers, seeds and also the cropping patterns. Other ancillary information was also provided such as regular employment news and latest happenings around the world.

Keywords:

Agricultural Information Kiosks, Information Dissemination, Networked Community, CorDECT WLL Technology, Parry's Corner

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Introduction

There is one thing that makes the villages falling under the radius of twenty-five kilometers with center as Nellikuppam Sugar factory, different from other umpteen villages in the country. Here the farmers, old or young, educated or otherwise, are not scared of mouse. The mouse we are talking about here is the computer mouse. The farmers in Tamil Nadu have reaped the benefits of ICT for improving their well-being and the standard of living. The farmers here have derived benefits such as elimination of middlemen, increasing their knowledge about the cropping patterns and increased their incomes with marginal investments made on ICT by EID Parry [1,2]. The scope of the case study is to examine the factors that facilitated the diffusion of ICT in a farming community and the benefits of this activity. EID Parry benefited by being able to source the raw material at a lesser price without any middlemen, the low cost technology helped them in achieving a better return on investment ration. This case study helps in seeing various factors how the company created a win: win situation for themselves and the farmers and building mutual trust [2].

Murugappa Group

The Murrugappa Group is one of the oldest family run business in India, it has an aggregate turnover of Rs.42,000 million and has diversified interests ranging from abrasives, engineering, farm inputs, confectioneries, chemicals and financial services. It is a firm with strong ethical values and believes in strengthening the cultural aspects of the community residing around its units. Coromandel Fertilizers, another subsidiary caters to the needs of rural farmers. EID Parry pioneered in the manufacturing of sugar in India. It is also pioneered in the field of sanitary-ware and bio-pesticides. ParryAgro is involved in plantations and production of algae products. Parry's Confectionery another arm of company specializes in producing chocolates and confectioneries. TI India, the group subsidiary manufactures tubes, cycles and car doorframes. EID Parry is the first private sector phosphatic fertilizer producer, it has interests in sugar, chemicals, farm inputs and bio-chemicals. The company has been continually and consistently supporting the farmers with various farm extension services like village adoption and crop advisory services. The company is also involved in soil sampling analysis and recommendations to the farmers. The soil sampling services have benefited more than 7500 farming communities. The company's another service, farms storm is aimed at educating the villagers about nutrient management and EID products. The company is actively involved in the

group contact, which is another extension of farm services. In this group contact progressive activities like crop seminars and farmers meetings are conducted.

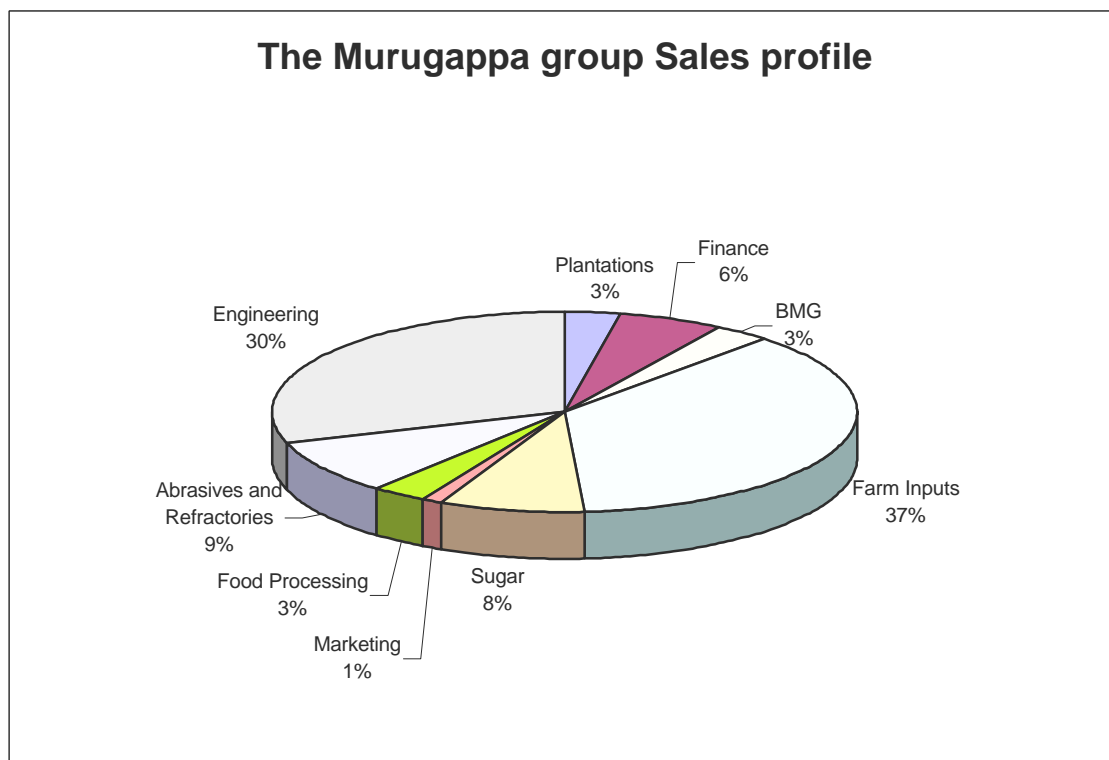


Fig 1 : The share of various businesses

The Murugappa group derives sixty percent of its revenue and profits from rural India as shown in **Fig 1**. The group wanted to take more concrete and holistic approach towards bettering lives and fostering the progress of the farming community. The group's vision was *"To make farmers three times richer in five years"*.

EID Parry - Sugar Division

EID Parry - Sugar Division is India's first integrated sugar complex in Nellikuppam in Tamil Nadu State. There are 4 sugar factories in Tamil Nadu.

EID Parry assists sugar farmers in activities such as:

- Crop Insurance and Crop loans
- Hellsin procurement
- Nutrient and Pest management
- Continuous crop monitoring
- Adopting latest technologies
- Diffusion of labor for harvesting and
- Arranging labour for harvesting.

EID Parry has 25 divisional offices in 4 districts and undertakes the activities through 158 Cane Officers reaching 80,000 farming families.

Idea initiation

EID Parry (I) Ltd. is more than 212 years old, one of the oldest sugar mill in the world. It is serving the farming community for over 160 years through its sugar division and its farm inputs division. Its sheer presence in the rural areas propelled the mutual growth of company and the farming community. Through joint work it has created long lasting relationships based on mutual trust. The chairman of the Murugappa group, of which EID Parry (I) Ltd. is a flagship company, believes:

“The fundamental principle is that no man you transact will lose then you shall not.”

- **Arthashastra**

His vision was to envisage a project that can create a win: win condition both for industry and farmers.

Project Conceptualization

Mr K. Raghunandan, Vice President (IS) and his team started looking at ways and means of realizing their chairman’s vision. They held several focus group meetings and brainstorming sessions. More than one hundred and fifty farmers were met to understand their problems and information needs through the focus groups and open meetings. These sessions had given them deep insights into the ground realities and other latent needs of the farmers. The following are the points that emanated from these sessions.

- **Lack of relevant information:** The chronic problems plaguing Indian agriculture is neither the lack of technology nor the R&D efforts but the inadequacy, ineffectiveness and inefficiencies in the dissemination of relevant information to the farming community - including but not limited to the right cultivation practices, correct post-harvesting techniques, and up-to-date information on market prices of commodities. The farmer is thus caught in the quagmire of sub optimal use of farm inputs, higher cost of credit and lower price realizations on his produce leading to insignificant disposable incomes for him and his family.
- **Difficulty in disseminating information:** The field inspector from EID Parry generally visit the fields of the farmers to understand their problems and solves them if they could or else they communicate this to the experts who then solves these problems. But this is easier said than done, because the task itself is a herculean because there are nearly 80,000 to 100,000 sugarcane growers and few field inspectors.
- **Lack of knowledge in allied business arenas:** Most of the farmers are not venturing into other business like mushroom cultivation, Bee keeping, poultry and other livestock's business, which actually has a tremendous potential for realizing additional income. Majority of the farmers are not cultivating the crop, which actually suits their field's soil and temperature because they lack the knowledge for cultivating such crops.
- **Feeling of being cut off from rest of the world:** Farming is not the only thing for farmers, they also need entertainment, knowledge of schools, colleges and universities where they can enroll their children.

After understanding such ground realities it was up to Mr K Raghunandan and his group to identify a project that could help solve the above-identified problems. The focus of Indian industry was on the upper income families, though the value opportunity was the other way around. Rural communities have limited choices, as investment in rural infrastructure has been low. The physical divide of assets thus resulted in asymmetry in the provision of assets as shown in **Fig 2**.

Accordingly, EID Parry conceptualized project that can provide choices for rural communities. This is the basis of this project.

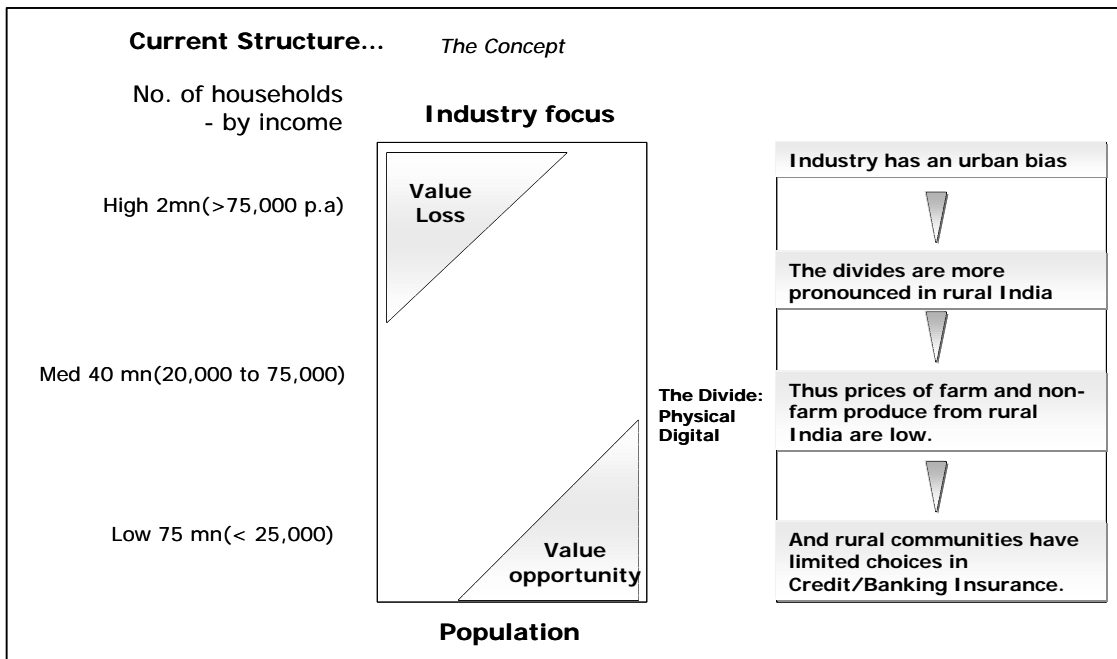


Fig 2: Basis of the project

The group’s vision “To make farmers three times richer in five years” doesn’t merely connote monetary prosperity but also includes social prosperity, which together in harmony makes the farmers to lead a happy life, as shown in **Fig 3**.

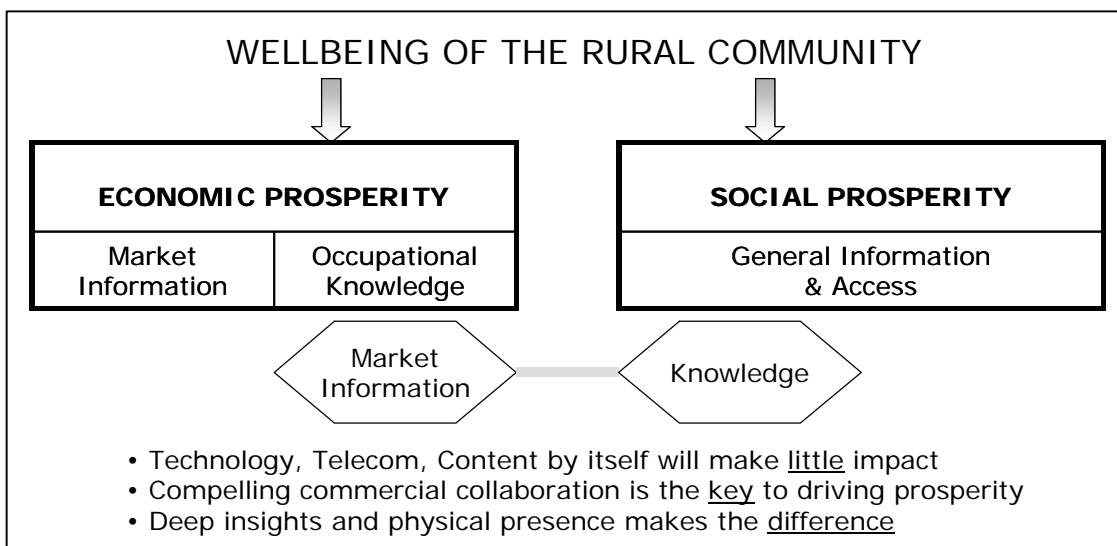


Fig 3: Prosperity in a Rural Community

Indiagriline – The positioning Networked Businesses

The concept

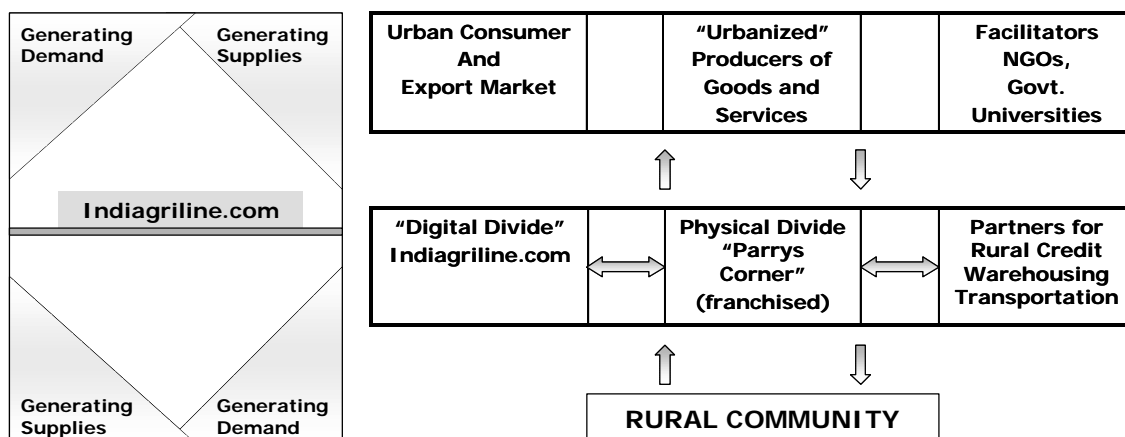


Fig 4: The concept of the networked community

EID Parry envisaged the creation of a networked community for enhancing social welfare that consists of both economic and social needs of the rural community. This in turn will enhance the rural income and demand as shown in **Fig 4**.

The portal www.indiagriline.com was envisaged as a medium that can bridge the digital divide between the rural and urban community [4]. The Parry's Corner will serve as access centers for rural farmers from where they can not just log on to the World Wide Web, look out various solutions for the problems encompassing their agricultural work and check their transactional details with the company (EID Parry Sugar factory at Nellikuppam) but also serves as a point where they can get all the required EID Parry products under one common platform. Apart from the above benefits the Parry's Corner also procures crops like Wheat, Rice etc once the farmer is willing to do so. This will help the farmer to get rid of problems like middlemen's commission, inappropriate weighing, eternal delay in payment by the brokers, logistical problems and wafer thin margins. The network can eliminate the problems of poor access to information and market. The network will enhance the transparency and reduce the problems of information asymmetry. Once the farmers sell their harvested crop to Parry's Corner and they will be devoid of the problems and will be getting better margins and at the same time their payment is settled within the twenty days of procuring. Thus, the project in one stroke bridges the digital divide that the internet has ushered in among the urban haves and the rural have-

nots by providing farmers the triple aspects of Content, Connectivity and Commerce which will then propels the economic and social well-being of the rural farmers

Features of Indiagriline

The content for www.indiagriline.com has been developed by using the in-house expertise of EID Parry's Sugar and Farm Inputs Division and Corporate R&D Lab along with the TamilNadu Agriculture University and its Research Stations, TamilNadu University for veterinary and Animal Sciences, National Horticulture Board, AMM Foundation, Murugappa Chettiar Research Center and the other players in agriculture related media and publishing houses. EID Parry is trying to bring more visual content. To make the experience richer and navigation easier, the portal is in completely vernacular (Tamil) with localized content and the site is equipped with mouse-overs, voice-overs and touch-screen kiosk is enabled. In order to overcome the bandwidth problem and make downloads faster it is equipped with On-Off line browsing –WebROM. The content of www.indiagriline.com consisted of four distinct information segments as shown in Tables 1 to 4, namely

- farm information
- farm business
- community information and
- other services.

Table 1. Farm information

<p><u>Agriculture</u></p> <p>General agriculture: General information on Seeds, Soils</p> <p>Crop information: Six important crops of Cuddalore</p> <ul style="list-style-type: none">• Sugarcane• Paddy• Groundnut• Banana• Tapioca• Cashew <p><u>Veterinary</u></p> <p>Dairy farming and Poultry</p> <p><u>Special topics</u></p> <p>Farmyard manure, vermicomposting and coir pith composting techniques, Mushroom cultivation.</p> <p>The content regarding the farm information is collected from:</p> <ul style="list-style-type: none">• EID Parry's R&D Division, Sugar Division and Farm inputs Division• TNAU- Research stations• MCRC• CIKS• AMM Foundation

Table 2 Farm businessMarkets and market prices

Regulated market rates and Local market rates for agricultural commodities in the areas of Panruti, Cuddalore, Vrindachalam, Red hills and Koyambedu. This information is collected from:

- Local personnel
- Government regulated market committees

For each market the following table is shown:

Name of the crop	Units	Maximum price	Minimum price	Average price

Financial and Insurance schemes

Loans available for vehicles, education etc and procedures of Nationalized and co-operative banks, SIDCO, Insurance, National Horticulture Board and APEDA is put up

The above information is collected by local personnel from:

- State bank of India
- Indian bank
- New India assurance
- United India assurance

Shopping guide for agri inputs

Consists of dealer's list dealing with Seeds, Pesticides and Fertilizers.

Cane Management System (CMS)

A special application for EID Parry's sugars division. This web enabled CMS is meant for:

- For registered cane growers to access transactional details with the company. The tentative format of table which farmer access when he surf the site indiagriline.com to check his transactional details is:

Season name	Farmers-id	Plot no.	Farmer's name	Village name	Division code	Division area	Amount settled

- For officers to organize Farm labor contract
- For labor contractors to access transaction details with the company

Further, farmers can access information about:

- Availability of Cane sets at nursery for planting
- Availability of Fertilizers and Pesticides stock
- Payment records from company
- Loan outstanding
- Cane Crushed and recovery details of the factory

Table 3. Community Information

Welfare schemes

- Government welfare schemes - eligibility criteria, application procedures, benefits

Education

Names and addresses of schools, polytechnics, computer centers in Cuddalore
Names and addresses of engineering colleges in TamilNadu

Health

Names and addresses of hospitals (govt. and private) in Cuddalore, information on nutrition and some frequently asked questions (FAQs)

NGOs

Their stated objectives and programs with contact address

Entertainment

Linked to www.tamilcinema.com and some other games site
The information is collected from:

- District Collector's office
- District administrative officers in various Departments
- AMM
- MCRC

Table 4. Services Provided

News

- General news
- Agri news
- Forthcoming events in agriculture
- Sugarcane R&D news
- Indiagriline club news

E-mail

Weather

- Local weather forecast for next forty-eight hours plus crop wise recommendation for agricultural operations
- Agricultural advisory from Indian Meteorological Department

Notice board

For success stories and notices for items up for sale

Others

- Horoscope and Matrimonial: linked to www.tamil.indiainfo.com
- What is Internet and why so useful
- How to Use the Site
- Search within
- Glossary of terms
- Keyboard Help

Connectivity

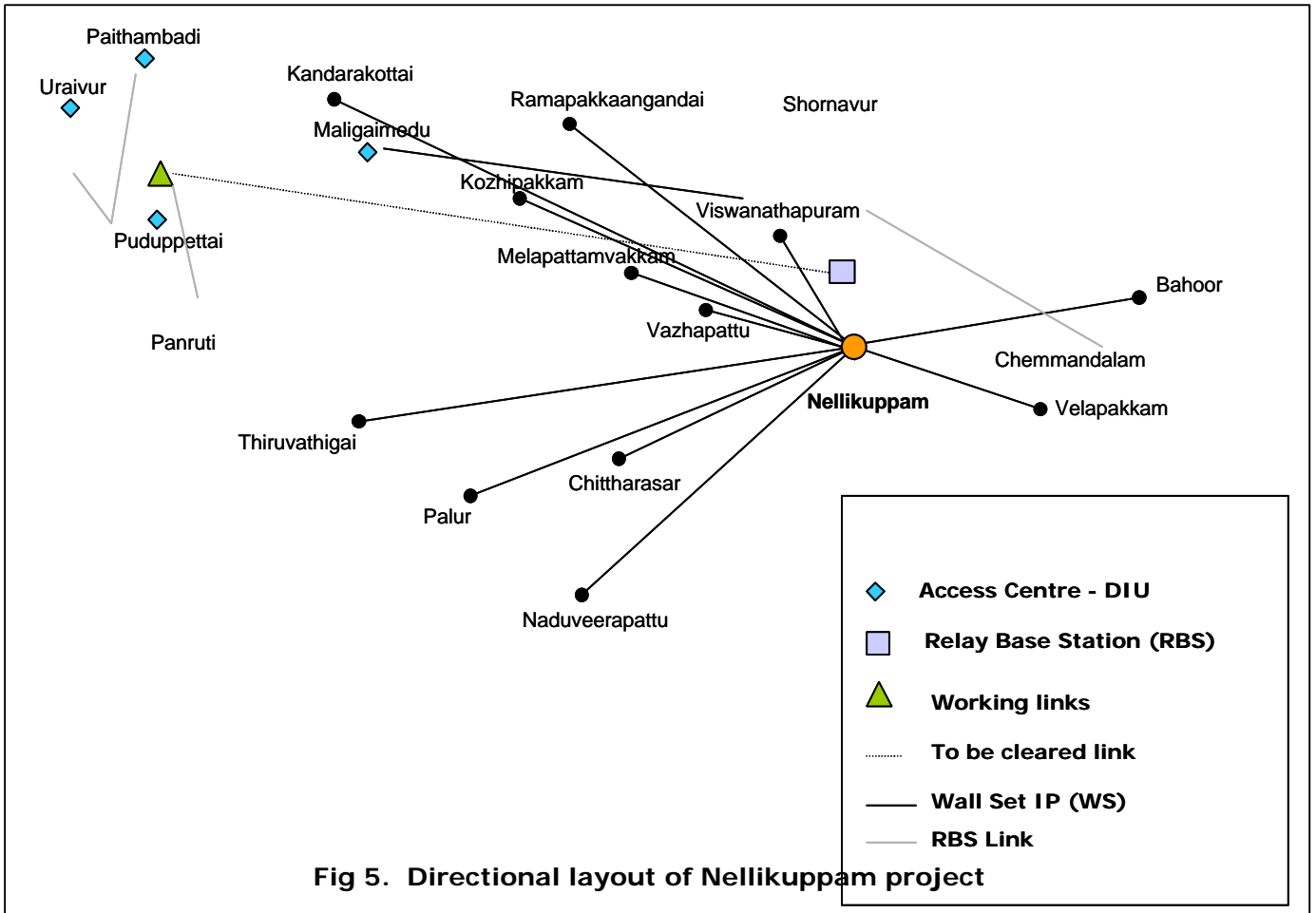
To make Indiagriline happen the company was scouting for an appropriate technology that could connect the farmers who resides in rural areas that does not have even basic telephone lines. During this period they came across several Internet access technologies and on-going projects were examined with respect to cost, reliability and presence in rural India. It was found that an indigenously developed technology (corDECT) by Professor Ashok Jhunjhunwala of Indian Institute of Technology (IIT)-Madras, perfectly fit into their need to provide reliable and low-cost connectivity. This corDECT (Digitally Enhance Cordless Technology) Wireless Local Loop technology, patented by IIT Madras, which allows simultaneous flow of voice and data on a single line at a much cheaper rate and provides 35/70 kbps simultaneous Internet and telephony within areas of about 25-30 km radius.

CorDect WLL technology provides fixed connection to homes and offices, much like a landline. The technology is capable of providing data communication at a much higher bit rate. The model works on convergence network between the local telephone line and the Internet and it is priced at Rs. 13,000/- per connection, the cost can be shared by the ultimate end-users.

In early 2001 a corDECT system was deployed with the Access Center at Nellikuppam, the town where the one fifty year old sugar factory is located. Since then many internet connections have been given in the villages surrounding the area. Out of this, twenty-eight are kiosks run by franchisees, who are farmers from the respective villages. In coming days, the facility will be extended to other villages falling under the twenty-five kilometer radius.

The Compact Base Station (CBS), which is at the EID Parrys sugarcane factory, hosts the corDECT server. The DIU (Digital Interface Unit) is the heart of the system.

The **Fig 5** shows the directional layout for Nellikuppam project and systems layout at the CBS, Nellikuppam respectively.



About Parry's Corner

Another key ingredient that makes this project workable is Franchisee model, which puts the farmer-entrepreneur in the driver's seat. In this, Franchisee model, EID Parry selects one of the most promising, influential, entrepreneurial, educated person willing to learn and use a new technology, generally a farmer entrepreneur sets up an one stop shop for information called "Parry's Corner". The Parry's Corners, as they are called, are not the ordinary Internet surfing centers which city-dwellers use. Most of the kiosks are set up at the residence of a farmer selected by the company on the basis of his credentials. Each Parry's Corner has a corDECT wall set, a PC, digital camera, web camera, multi-functional printer, telephone, furniture and a power source with a back up. Parry's Corner not only aims at removing the digital divide but also the physical divide. They serve as a common roof under which a farmer can get EID Parry products like fertilizers, seeds, Parry's chocolate and confectioneries, TI India cycles etc.

Project Benefits

The farmers are effectively using this facility for different purposes like farming methods, technical information, computer education of children, entertainment, international news etc. Sugarcane management system is one of the main feature of these centres. The farmers who are using information on sugarcane, paddy and banana cropping patterns from these information centres are getting considerable benefits.

The benefits realized are

- decrease in fertilizer use
- decrease in pesticide us
- accurate time of cane cutting
- increase in yields and
- quick solution to diseases like root borer.

The operators earn Rs.800/- to 2000/- per month through running these information centres by providing computer education, mailing, internet, DTP, Xerox charges and also selling EID parry products. The information on village level Parry's Corner located around Nellikuppam are given in **Table 5**. This is based on random survey and is stated as current income per month at the time of the survey.

Table 5. Income from Parry's Corner

Village	Operator name	Financial support for parry's corner	Parry's Corners income/month (Rs.)	Services available at Parry's corner
Sitharasur	Laxmanarayana	Bank loan	1000	CMS, Exam results, information on paddy, banana, cotton, chillie games and DTP
Vellapakkam	Ramachandran	Bank loan	800	CMS, Exam results, information on paddy, cotton, chillie, banana, games and DTP
Tukunampakam	Annamalai	Bank loan	1500	CMS, Exam results, information on paddy, cotton, chillie, banana, games and DTP
Maligaimedu	Satish Kumar	Bank loan	2000	CMS, Exam results, information on paddy, cotton, chillie, banana, games and DTP
Nadeveera pattu	Ayyanar	Bank loan	1200	CMS, Exam results, information on paddy, cotton, chillie, banana, games and DTP
Nathamedu	Bala	Self Help Group	1000	CMS, Exam results, information on paddy, cotton, chillie, banana, games and DTP

The benefits are enhanced through the provision of value added services and educational facilities. EID Parry has a tie-up with NIIT India, to provide the computer education to the farmers children. This will greatly cut down the time spent on traveling from their village to the nearby city. The classes are conducted at the Parry's Corner thrice a week. For each student enrolled for a course the franchisee will be getting user charges for making use of his premises and his PC. The courses offered by NIIT-Parry's Corner is shown in **Table 6**.

Table 6. Courses and Commission

Sl. No.	Program	Total fee Rs.	Hours	Franchisee commission Rs.
1	C and Data Structures	3500	72	490
2	Visual Basic 6.0	6500	60	910
3	Java	5500	60	770
4	SQL Server 7.0	6500	60	910
5	C++ and C#Migration	4700	72	658
6	Linux and C and C++	9000	192	1260
7	Linux and C and C++	6500	144	910
8	Swift Jyoti	599	10	83.86
9	MOUS	750	6	105
10	India 95 (Swift Netsurf, MS Word, MS Excel, MS PowerPoint)	2749	54	384.96
11	Swift Netsurf	999	24	139.86
12	Expert 95 (Advance Word, Excel and PO)	2999	54	419.86
13	Basic HTML Programming	1800	12	252
14	Basic VB.NET Programming	4800	36	672
15	Basic C# Programming	3600	36	504

Daily Operations at Parry's Corner and Benefits Derived

Some illustrative examples are provided here. Mr Jayapal who is an employee in the village Patturakotai which is 3 Km away to Parry's Corner located in Nadeveerapattu, has been carrying out Cashew Nut Shell Liquid business for the past two years. At the time of starting, he had no data regarding the market prices, percentage of cashew etc., After some time, he gained experience for utilizing the data. For the last one year, EID Parry is running one Parry's Corner near by his village, every day he will come there and use this centre. From the beginning he is using the Internet for collection of data on cashew shell liquid. The information about process improvement enhanced his income. In the vicinity of the village there is no one who

could give such information. The cost of information was a minuscule compared to the accrued benefits. According to him, before he was cheated by number of merchants in the form of high price and less percentage cashew shell liquid by mixing some other liquids.

Economic benefits of the farmers using the Parry's Corners were assessed in selected villages. According to the farmers, by using these practices available in the centres it is very easy to reduce the cost of farming. In many cases there has been an increase in productivity. In Nadeveerapattu and in the adjoining villages farmers are getting good results after practicing the prescribed package. Some farmers have been able to handle plant diseases such as withering edges of banana leaves, Topioca and 'Ground Nut Maravatti Puchi disease' through the use of information. The Ground Nut Maravatti Puchi disease affects the inside seed of the nut without disturbing the outside. The savings are reported by various farmers are shown in **Table 7**.

According to the users of the Parry's Corner, the method and the duration of applying fertilizers and pesticides will effectively reduce the production cost. Some farmers have experienced increase in yield of Sugarcane. The increases reported are 5 to 10 tonnes. In Vellappakan village, people are using the Parry's Corner for various purposes such as employment news, global news and to obtain government policy information.

In Vellappakam village, the farmers were facing Red Rod and Inter Nude Borer diseases in the Sugarcane crop. This year they successfully managed the crops by following a Cane Management System. In Sitharasur village, farmers earlier faced 'Beetle Nut Karundal Bacterial disease'. Now they used information and managed the beetle nut disease. Forgetting information they use either internet or an e-mail query to a research agency.

The Parry's Corner in Tukunampakam village was started only one month back. Only the farmers who are the members of EID Parry are using this facility. The villagers are using the Corner daily for different purposes like Internet, temple information, astrology, farming methods for paddy, cotton, banana and Cane Management System. Some farmers are using it for obtaining market information for vegetables as well as that of market appliances. Along with these, they also learned about different types of diseases affecting crops, and sowing practices. This year the

members of EID parry used it for obtaining information about the cutting date for sugarcane and soil conditioning practices. The farmers believe that scientific practices will help them in reducing the production cost and increasing the productivity.

The cost of one bag of paddy is around Rs.400/- and one tonne of sugarcane is around Rs.763/- this year. Farmers are utilizing the Parry's Corner for obtaining agricultural data on the six important crops at Cuddalore as well as farming practices and timing of fertilizer application. For all the crops, the farmers have reported increased income as well as higher productivity. In some cases the benefit has been in the form of increased yield. In other cases the benefits came in the form of reduced expenditure. EID Parry officials and EID parry farmer groups are expecting more results in the coming years, because this year drought conditions are very high through out the Tamilnadu state. The economical benefits of some of the farmers are as shown in the **Table 7**.

Table 7. Economical Benefits

(1) Name of the farmer	(2) No. of Acres cultivating		(3) Yield		(4) Expenditure (Rs.)		(5) Savings Through Yield & expenditure *
	Before use of Parry's Corner	After use of the Parry's Corner	Before	After	Before	After	
NADEVEERAPATTU							
Gunalan	Paddy- 1	Paddy- 1	25 B	30 B	6000	5000	3000
	S/cane-2	S/cane-2	90 T	100 T	30000	26000	11630
Avavali	Paddy- 4	Paddy- 4	100 B	115 B	24500	21000	9500
	S/cane- 11	S/cane- 11	550 T	572 T	165000	143000	38786
Sreenivasan	Paddy- 4	Paddy- 4	108 B	120 B	20000	16000	8800
	S/cane- 4	S/cane- 4	200 T	220 T	56000	48000	23260
MALIGAIMEDU							
Ravichandran	S/cane- 2.5	S/cane- 2.5	162.5 T	162.5 T	37500	33000	4500
PremKumar	S/cane- 8	S/cane- 8	400 T	440 T	116000	100000	46520
Kumar	S/cane- 7	S/cane- 7	350 T	350 T	103600	95200	8400
Balakrishna	Paddy-3	Paddy-3	60 B	90 B	12000	10500	13500
Venkatachala pathi	S/cane- 5	S/cane- 5	300 T	325 T	60000	50000	29075
VELLAPAKKAM							
Rajaram	Paddy-15	Paddy-15	375 B	375 B	60000	45000	15000
	S/cane-15	S/cane-15	720 T	755 T	225000	195000	52890
Ananta-raman	Paddy-6	Paddy-6	150 B	150 B	27000	22000	4800
	S/cane-6	S/cane-6	240 T	270 T	90000	84000	28890
SITHARASUR							
Laxmanarayana	Paddy-8	Paddy-8	240 B	240 B	36000	32000	4000
	S/cane-2	S/cane-2	100 T	104 T	28000	26600	4452
	Banana-2	Banana-2	-	-	40000	35000	5000
NATHAMEDU							
Ramanathan	Paddy-2	Paddy-2	55 B	60 B	10000	8000	4000
	S/cane-2	S/cane-2	50 T	50 T	28500	26500	2000
Murugan	Paddy-2	Paddy-2	60 B	60 B	10000	8000	2000
	S/cane-4	S/cane-4	200 T	208 T	60000	56000	10104

Notations used in the table: B for Bags; T for Tonnes; Cost of paddy: 1 bag=Rs.400; Cost of sugarcane per tonne Rs.763

Note: For paddy:

Increase in yield (Bags)* 400+decrease in production cost=savings

For S/cane:

Increase in yield (Tonnes)*763+decrease in production cost=savings

Positive synergies were generated between the farmers and ICT and benefits derived from such synergies like cost savings for the farmers and improvements in the productivity, which is shown in **Table 7**.

Analyzing economic benefits for Paddy crop

Table 8. Impact on yield and expenditure

Farmer	Yield of Paddy Crop in bags		Impact on yield	Expenditure in Rs.		Impact on Expenditure	Rise in income (Rs.)
	Before using Parry's Corner	After using Parry's Corner		Before using Parry's Corner	After using Parry's Corner		
Gunalan	25	30	20.00%	6000	5000	-16.67%	3000
Avavali	100	115	15.00%	24500	21000	-14.29%	9500
Sreenivasan	108	120	11.11%	20000	16000	-20.00%	8800
Balakrishna	60	90	50.00%	12000	10500	-12.50%	13500
Rajaram	375	375	0.00%	60000	45000	-25.00%	15000
Anantaraman	150	150	0.00%	27000	22000	-18.52%	5000
Laxmanarayana	240	240	0.00%	36000	32000	-11.11%	4000
Ramanathan	55	60	9.09%	10000	8000	-20.00%	4000
Murugan	60	60	0.00%	10000	8000	-20.00%	2000

[3]

The economic benefits arising out of application of ICT has been estimated using increase in yield and reduction in expenditure. The overall increase in income for nine families, selected randomly are estimated and presented in **Table 8** for the paddy crop. In the case of paddy, income came mostly from the reduction of expenditure.

The use of Parry's Corner was quite pivotal in decreasing the expenditures for the Paddy farmers. As shown in **Fig 6 & 7**, we can see that the yield has increased and the expenditures have decreased in the villages surveyed

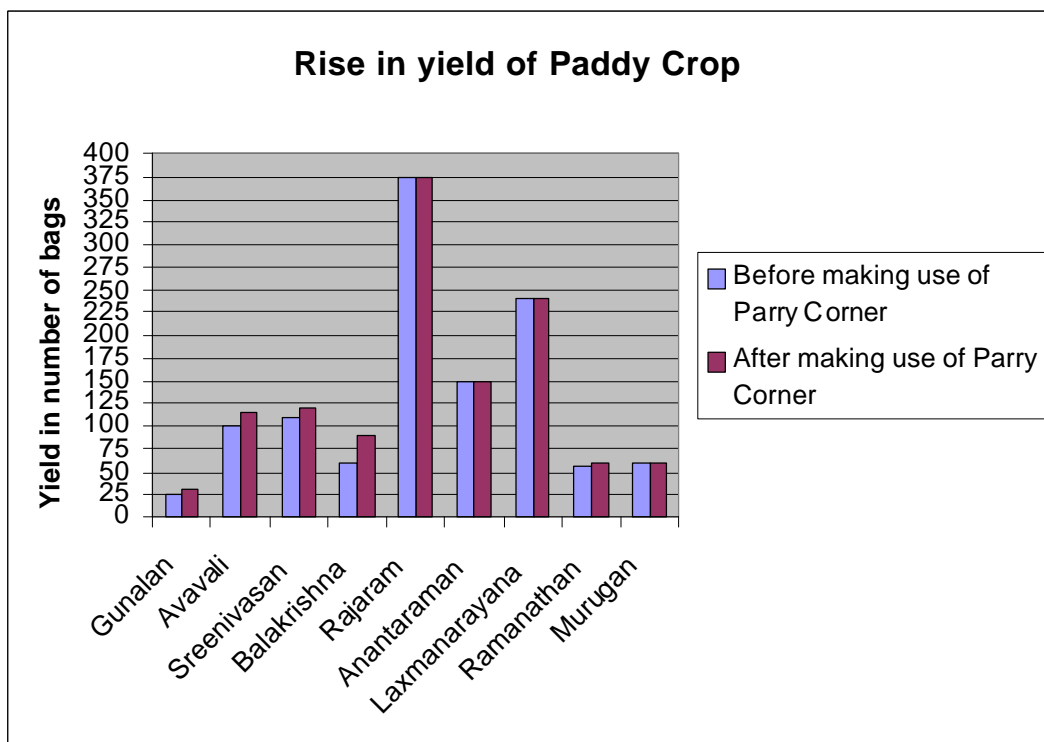


Fig 6 : Rise in the yield of Paddy Crop

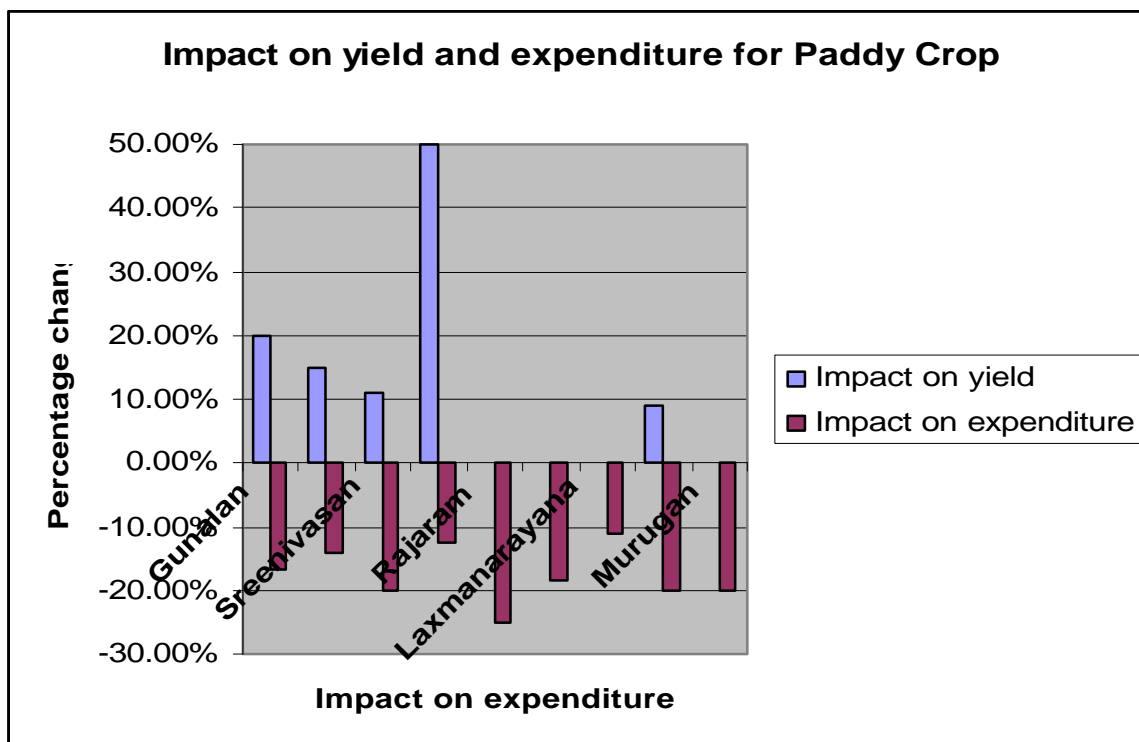


Fig 7 : Change in yield and expenditure

Analyzing economic benefits for Sugarcane crop

Table 9. Impact on yield and expenditure

Farmer	Yield of Sugarcane in tons			Expenditure (Rs.)			Rise in income (Rs.)
	Before using Parry's Corner	After using Parry's Corner	Impact on yield	Before using Parry's Corner	After using Parry's Corner	Impact on expenditure	
Gunalan	90	100	11.11%	30000	26000	-13.33%	11630
Avavali	550	572	4.00%	165000	143000	-13.33%	38786
Sreenivasan	200	220	10.00%	56000	48000	-14.29%	23260
Ravichandran	162.5	162.5	0.00%	37500	33000	-12.00%	4500
Premkumar	400	440	10.00%	116000	100000	-13.79%	46520
Kumar	350	350	0.00%	103600	95200	-8.11%	8400
Venkatachalapati	300	325	8.33%	60000	50000	-16.67%	29075
Rajaram	720	755	4.86%	225000	195000	-13.33%	56705
Anantaraman	240	270	12.50%	90000	84000	-6.67%	28890
Laxmanarayana	100	104	4.00%	28000	26600	-5.00%	4452
Ramanathan	50	50	0.00%	28500	26500	-7.02%	2000
Murugan	200	208	4.00%	60000	56000	-6.67%	10104

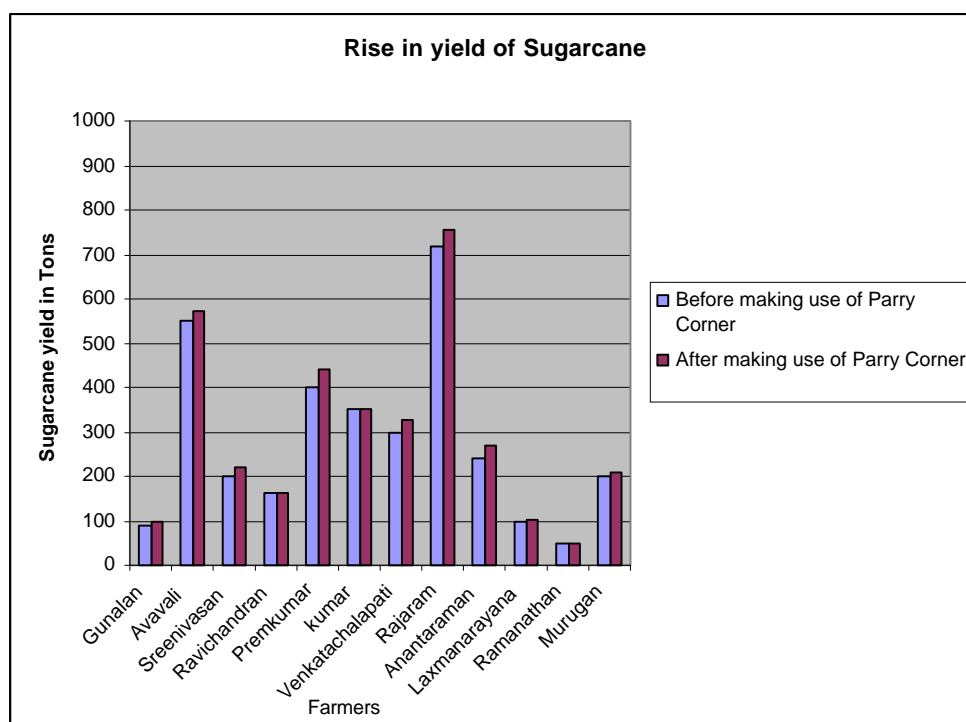


Fig 8 : Rise in the yield of Sugarcane

A similar exercise was done for the sugarcane as well. The results have been similar expenditure came down by about 10 percent, as shown in **Table 9**. The combined effect of increased income have been captured in **Table 10**. This clearly indicates that ICT can have positive effect on incomes of rural families.

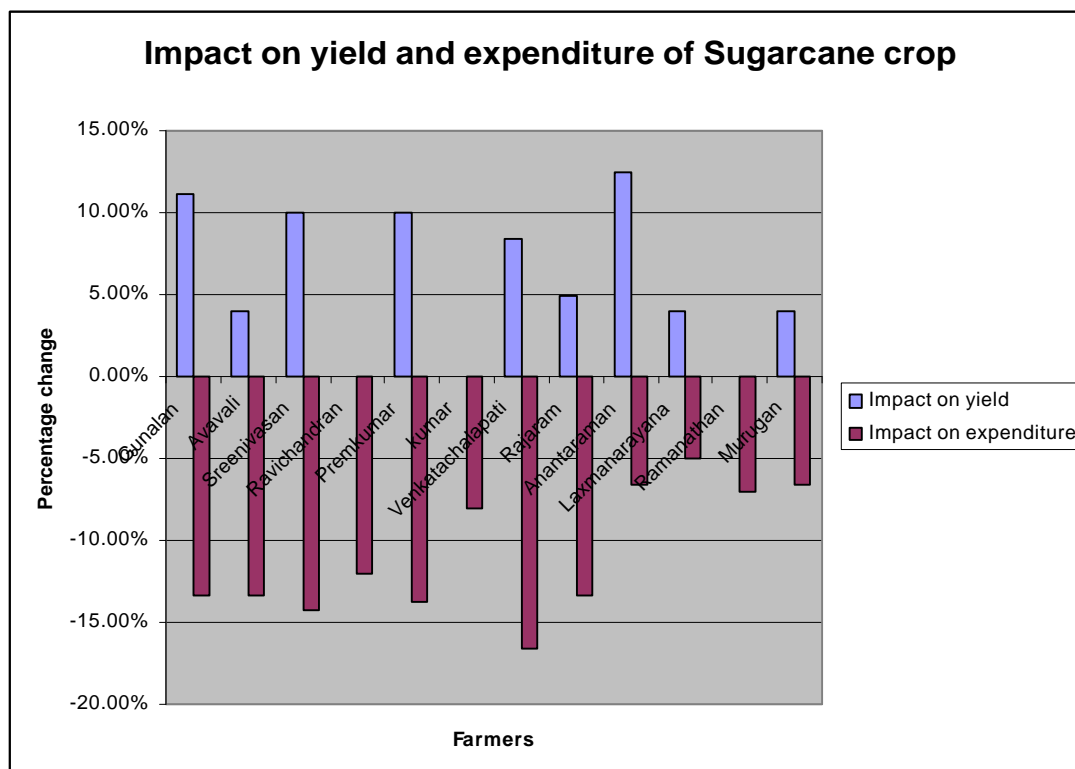


Fig 9: Impact on yield and expenditure of sugarcane crop

Table 6. Impact on farmer's income

Farmer	Rise in income from Paddy crop	Rise in income from Sugarcane crop	Total rise in income from both crops
Gunalan	3000	11630	14630
Avavali	9500	38786	48286
Sreenivasan	8800	23260	32060
Ravichandran	-na-	4500	4500
Premkumar	-na-	46520	46520
Kumar	-na-	8400	8400
Balakrishna	13500	-na-	13500
Venkatachalapati	-na-	29075	29075
Rajaram	15000	52890	67890
Anantaraman	4800	28890	33690
Laxmanarayana	4000	4452	8452
Ramanathan	4000	2000	6000
Murugan	2000	10104	12104

Training: one of the main reasons for the success of the ICT initiative by EID Parry has been the intensive skill development efforts. EID Parry trained both the franchises and the farmers in the community it operates.

Franchisees

- More than 75 franchisees have been met and 52 selected after careful scrutiny. 27 locations connected up in the first phase
- Franchisee provides: space for the kiosk, investment and employs an operator
- Profile of operators: local educated unemployed youth, dynamic and enthusiastic. In most cases related to the franchisee
- These operators have been trained for a week on computers, networking and some fundamental applications –MS Office, IE5.0 etc.

Farmers

- More than 150 farmers have been met with for understanding information needs through focus groups and open meetings

- The field inspectors make sure that each and every farmer with whom he interacts routinely is educated about the benefits he could reap by making use of IAL (Indiagriline) and being the member of IAL forum. He also talks to the spouses of the farmers and facilitates them to form a self-help group (SHG) consisting not more than twenty women, who then pool some money by making individual contribution and start some small business.
- Farmer meetings have been held in about 10 locations so far (approximately 450+ farmers) to demonstrate the portal, encourage usage, and take feedback

Replicating the experience

Many of the rural ICT initiatives did not succeed because of the absence of skill development efforts. The Nellikuppam project is being replicated in three other Sugar factory areas (of EID Parry) in TamilNadu. In the next few months, the facility will be extended to another 150-odd surrounding villages falling under the 25 km radius, which would benefit over 25,000 farmers in the region. The replication involves extending the technologies, franchisee networks and operator training. These are discussed below.

Technology

Relay Base Station (RBS-1) to connect up to 25-30 subscribers operational at Puduppetai.

RBS –2 coming up at Kullanchavadi.

Franchisee Networks

Second Batch of 15 franchisees coming up.

Operator Training

Training for second batch of franchisees.

Refresher training for the First Batch.

Replications involved learning from the experience and diffusing the network rapidly.

Conclusions

ICT has been helping the traditional agrarian economy. Farmers are able to sell their products over the Internet; also variety of information is available to them for enhancing the knowledge and the productivity of the farm output. The survey results indicate that the benefits came from improving the operational efficiency [5].

The ICT initiative by EID Parry such as launching of the website www.indiagriline.com and the Parry's Corner have helped in the elimination of the middlemen, enhanced earnings for the farmers. The marginal benefits of ICT have been high as EID Parry used a low cost technology. They were able to create an ICT platform that helped them to launch a series of services thereby providing for economies of scope. Platforms are a source for multiple services. The selection of a low cost option helped them to replicate it to other areas without substantial investments. For low-density networks, low cost options will have a high savings to investment ratio.

EID Parry is very active in replicating the experience at other villages also and spreading the benefits to the untapped grass-root farmers. EID Parry is now trying to spread the product portfolio for which these services can be offered.

The main reason for the success of the EID Parry experience has been prior consultation with the beneficiaries. Before implementing the project a detailed requirement analysis was carried out. This elaborate exercise helped them to understand the needs comprehensively and then design a system that could meet most of their needs. Another reason that facilitated the success of the ICT initiative has been the use of self help groups for interaction and group learning. The fact that EID Parry has been operating there for a long time in an ethical manner created mutual trust. This also helped in the rapid diffusion of technology. The intensive training offered by EID Parry also helped in the rapid diffusion of the ICT. Though ICT is a new technology platform, the trust created by the company through its ethical operations helped it to create a climate that was based on mutual trust. Consultation, participation and collaboration sustained the operations creating a win-win situation.

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