

Working Paper 226

***E-GRAMA KENDRA -A Re-Engineering Model: ICT a Channel for Village
Economic Development & Community Knowledge Partnership***

By

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April 2004

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Abstract: This paper traces how the Indian agriculture sector has contribute to the national GDP. It also interrogates government initiative to modernize and make it a profitable sector. If not, a re-engineering model to improve the village economic system by making use of ICT (Information and Communication Technology) has been suggested. The role of ICT is for information exchange between various agencies and end-users to achieve the “cost, quality, service and speed to improve the economy at village level”.

**E-GRAMA KENDRA -A Re-Engineering Model: ICT a Channel for Village
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1. Background:

India is one of the world's largest producer of the most agriculture commodities with large domestic consumption. However very little effort as been made for sustainability of the sector, which depends on the cost side of the agriculture, mainly inputs, like resources, crop planning and pre and post-harvesting technology.

Though, both state and central governments have put an effort for sustainable village economy by way of increasing agriculture output by providing important inputs through several institutions, the efforts have not materialised in any form to increase the profit margin of the farmer.

The Table 1 and Table 2 reveal the importance, competitive position and potentiality of the Indian agriculture in the economic development.

**Table 1: GDP Contribution by Agriculture and Industry Sectors.(Rs. in Crore,
Figure in the brackets are %)**

Sector	1994-95	1995-96	1996-97	1997-98	1998-99	1999-01
Agriculture	255193 (27.83)	277846 (25.89)	334029 (26.86)	353490 (25.43)	423247 (26.19)	443923 (24.85)
Manufacturing	155427 (16.85)	193801 (18.06)	220675 (17.75)	231891 (16.68)	251793 (15.58)	274603 (15.37)
All other activities	506438 (55.22)	601624 (56.06)	688842 (55.39)	804661 (57.89)	940993 (58.23)	1067933 (59.78)
Total GDP	917058 (100)	1073271 (100)	1243546 (100)	1390042 (100)	1616033 (100)	1786459 (100)

Source: National Accounts Statistics (NAS) 2001, PP15-16

Table 2: India's Competitive Position in Agriculture- 1995-2060

Items	World production share 1995	India's Rank	World Share Trend 2000	Relative Yield (Best) Trend 2000	Relative Yield (Average) Trend 2000	Relative Price 1995
Rice	21.10	2	Increasing	Decreasing	Increasing	0.61-0.79
Wheat	12.13	2	Increasing	Decreasing	Decreasing	0.93-0.99
Maize	1.85	8	Increasing	Decreasing	Decreasing	0.93-1.00
Millet	33.70	1	Decreasing	Increasing	Increasing	0.46-0.84
Pulses	25.69	1	Increasing	Increasing	Decreasing	0.69-1.98
Ground nut	26.08	2	Decreasing	Decreasing	Decreasing	0.91-0.96
Sunflower	4.79	7	Decreasing	Decreasing	Increasing	0.81-3.54
Soybean	4.02	5	Decreasing	Decreasing	Decreasing	0.42-0.57
Rapeseed	16.78	3	Decreasing	Decreasing	No change	0.81-1.40

Items	World production share 1995	India's Rank	World Share Trend 2000	Relative Yield (Best) Trend 2000	Relative Yield (Average) Trend 2000	Relative Price 1995
Sugarcane	6.01	2	Increasing	Decreasing	Decreasing	0.81-1.24
Tobacco	9.01	3	Increasing	Decreasing	Decreasing	0.12-1.15
Cotton	11.63	3	Increasing	Decreasing	Decreasing	0.51-0.89
Jute	53.25	1	Increasing	Decreasing	Increasing	0.71-0.87
Tea	28.79	1	Decreasing	Decreasing	Decreasing	0.71-0.78
Coffee	3.57	8	Increasing	Increasing	Increasing	0.39-0.75
Pepper	26.30	1	Decreasing	No change	Decreasing	0.82-0.83
Potato	6.11	5	Increasing	Increasing	Increasing	0.44-1.30
Onion	10.77	2	Increasing	Decreasing	Increasing	0.60-1.81
Banana	18.03	1	Increasing	Decreasing	Increasing	0.17-0.60
Grapes	1.25	19	Decreasing	Decreasing	Decreasing	0.27-0.94
Papaya	9.55	4	Decreasing	Increasing	Increasing	0.87-0.98

Note: Technological Innovation and Economic Development: Choices and Challenges for India, Prof.S.Chandrashekar and K.P.Basavarajappa, Economic and Political Weekly, August 25, 2001.

2. Why the Village Economy is Poor?

Then the question arises that, with all the agriculture richness, why Indian farmer's profit margin is not increased. The answer is very simple, that, the Indian agriculture and village economy is not addressing the complete value chain system. Since so many years, the village economy and the infrastructures are controlled and monitored by the government institutions. These institutions are mostly used top down approach in all decision-making processes, therefore, virtually there is no role of the village community involvement in decision-making processes. The village community is also not much bothered to play the role in decision-making and managing the resources. The community thinks that, since government controls the resources, government owns also the responsibility.

These will cause, the non-functioning of community's institutional and organisational culture elements like collective ownership, responsibility, collective sharing, decision-making and management.

Over several years the policy makers tried different experiments to improve the economy but not much progress was there in bringing the profit margin of the agriculture. It is worth noting that the some of the important inputs goes into agriculture. The Table 3 provides the details of R&D spending in agriculture sector from the government.

Table 3: Government R&D Funding in 1994-95 & 1999-2000 (Rs. in Crores)

Area	R&D 94-95	%	GVA 94-95	R&D 99-2000	%	GVA 99-2000
Science, Technology & Industry	1087.35	18.9	215554.94	1739.8	15.4	403906.97
Agriculture	568.89	9.9	261239	1477.53	13.1	445183.2

Other Dept/ Organisation	4089.57	71.2	41820.97	8053.63	71.5	82423.15
Total	5745.81	100	518614.91	11270.96	100	931513.32

Source: *Technological Innovation and Economic Development: Choices and Challenges for India*, Prof.S.Chandrashekar and K.P.Basavarajappa, *Economic and Political Weekly*, August 25, 2001.

Table. 4 provides the details of bank credits going into agriculture sector and Table. 5 gives the utilisation of power and Table. 6 provides the fertilisers consumption.

The table 6 gives the yield rate of Indian agriculture with world average yield.

Table. 4

Total Direct and Indirect Finance from Bank Groups (Rs.in Crores)

Item/Year	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Agriculture	24948	28809	31634.2	35262.5	40889.3	45638.3	51730.4

Source: *Total Credit by Bank Groups, Money and Banking, CMIE, September 2002.*

Table. 5

Electricity Consumption in Agriculture

Year	Consumption (GWH)	% of the total Power Generation
1959-60	753.95	6.10
1969-70	3774.11	9.20
1979-80	13452.00	17.23
1989-90	44055.91	25.12
1996-97	84018.95	29.99

Source <http://www.indiastat.com/india>

Table. 6

Consumption of Plant Nutrients Per Unit of Gross Cropped Area (Area in 000 hect and nutrients are in Kg/hect)

Year	Gross Cropped Area	N	P ₂ O ₅	K ₂ O	Total
1951-52	133234	0.44	0.05	0.06	0.55
1962-63	156760	2.12	0.53	0.23	2.88
1971-72	165186	10.88	3.38	1.82	16.08
1980-81	172630	21.31	7.03	3.61	31.95
1989-90	182270	40.52	16.54	6.41	63.47
1996-97	189592	54.34	15.70	5.43	75.47

Source <http://www.indiastat.com/india>

Table 7

INDIAN AGRICULTURAL YIELDS 1995 & 2000

Crop	Indian Yield (Kg/Ha)		Average World Yield (Kg/Ha)		Relative Yield	
	1995	2000	1995	2000	1995	2000
Rice	26,972	30,269	36,599	38634	0.74	0.78
Wheat	25,590	26,213	24836	27057	1.03	0.97

	Indian Yield (Kg/Ha)		Average World Yield (Kg/Ha)		Relative Yield	
Maize	15,854	17,692	37905	43360	0.42	0.41
Millets	6,790	7,500	7118	7518	0.95	1.00
Pulses	6,122	6,338	7294	8152	0.84	0.78
Ground nuts	10,073	8,592	13032	13073	0.77	0.66
Sunflower	5,943	5,714	12541	12024	0.47	0.48
Soya beans	10,121	9474	20307	22090	0.50	0.43
Rapeseeds	9,502	9684	14333	14721	0.66	0.66
Coconuts	52,497	58421	45694	44658	1.15	1.31
Sugarcane	711,990	750238	626865	666093	1.14	1.13
Tobacco	14,874	15149	15146	16406	0.98	0.92
Cotton	7,284	6857	15860	16420	0.46	0.42
Jute	16,393	17417	16703	17126	0.98	1.02
Tea	17,614	15945	11399	11861	1.55	1.34
Coffee	7,200	10071	5354	6164	1.34	1.63
Pepper	3,140	3132	6451	6797	0.49	0.46
Potato	162,720	173077	155291	160729	1.05	1.08
Onion	104,997	113747	164683	175869	0.64	0.65
Bananas	237,897	247191	146540	151728	1.62	1.63
Grapes	175,000	175000	75418	82731	2.32	2.12
Papaya	112,240	112500	179479	166873	0.63	0.67

Source: Agriculture - The Key to Development- Technology Priorities for India, IIM-B-TIFAC Study, 2001.

These spending only increase the cost side of the agriculture, but do not translates into profit. This may be because of bad crop planning, absence of information exchange between the government and the community in the areas of soil, seeds, water, pest management and market access, etc. Actually, the increase of inputs and R&D should reflect the overall yield rates of the different crops, but Table.7 reveals not much is translated into output.

3. What is the Solution to Improve the Village Economy?

As we discussed earlier, there is a big gap between the support institutions and the community. In the recent days, there is some efforts in few states making use of ICT (Information and Communication Technology) for development. These are Computerization of Land Records, creation of Web Sites of various Departments, Market Information etc. But much of it is not directly useful to end-user, because, both government and users are not well equipped how the information has to use for their needs. Just computerization is not the solution to the problem, but accordingly one has to change the institutional mechanisms for proper dissemination of information.

To evolve the new method of information flow and institutional mechanisms, the author is examining the adaptability of the method called Business Process Re-engineering (BPR).

In 1990, Michael Hammer¹ in his article, *“Reengineering Work: Don’t Automate, Obliterate”*, popularised the term “BPR”. Therefore BPR has been offered as an enabler of organisational transformation in providing the quality service to the end-users.

In 1993, Michael Hammer and James Champy have given the definition for BPR *“Reengineering”, properly, is “the fundamental rethinking and radical redesign of business process to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service speed”*

The question arises how do we achieve the cost, quality, service and speed to improve the economy, whether just simply computerized the whole system or redesign the system by mapping the existing process and eliminating non-value added function. The answer is, after going through the literature and personal visits to various institutions, just computerization is not making much headway. Therefore better would be redesigning the system by using the BPR methods and employing the ICT as chief “ENABLER” of development.

4. Information and Communication Technology (ICT)

Over the years, village economy has failed to capitalise the benefits of “Information and Communication Technology (ICT), the recent developments in ICT in India is remarkable. Therefore, ICT is the chief “ENABLER” to redesign the village economic process. For past several years, farmers have failed to get benefits from technological advances to produce maximum product and hence increased income. This is not solely due to a lack of investment in technology but lack of awareness of how technology can be utilized, or because technology is not being made relevant to the lives of the people in rural areas. All the above conditions of the current systems make us to redesign the process.

The two important elements of ICT to achieve the results are Shared database and Networking. These two elements play a vital role in the form of Computation, Communication and Infoware Technology helps in translating the resources into end products. The economic scope of the process of transformation results in reduced cost of production, cost of coordination and cost of information. A redesigned E-Grama model will provide the network and database sharing methods to achieve the economic output.

4.1 Using ICT to Integrate Local Information Systems²

- Managing the local information using ICT
- Identifying the locally appropriate institutional information managers
- Experimenting with the flexible interfaces for local knowledge sharing
- Mapping information and knowledge systems that serve local communities and establishing the most effective approaches to using ICT within the existing knowledge and information systems.

- Usage of information system to empowers communities
- Evaluating the new institutional model for decentralization and good governance.
- Economic self-reliance of the local community.

5. A Redesigned Cluster Level Network for Economic Development

A redesigned model called E-Grama Kendra or E-Village Center, an integrated computer aided model, acts as a resource center to cater the services related to village development. The model consists of three sub-domains. These are *The Villages*, *The Support System at Cluster* and *The Government and other Institutions*.

The center consists of a cluster of 8-15 villages with in the radius of 10 KM. There will be 3 area experts like, agriculture scientist, social scientist and an engineer at *The Support System*. There will be a computer and internet connection to build the village level database and accessibility and sharing the data with other user agencies like Government Departments, Banks, Research and Market Institutions. These experts will provide all services in their respective areas to village community and the user institutions in the form of virtual database and data sharing between the user groups.

The Village sub-domain consists of a village level institution, a decision-making body for overall development of the community. The body will constantly in touch with the support system at cluster level for all matter related to agriculture, village infrastructure, health, education, etc.

The Government and Other Institutions are mainly three level local bodies "Zilla Panchayath", "Taluk Panchayath" and "Grama Panchayath". The other important institutions the farmers very often will be interacting are Banks, Insurance Companies, Agricultural and Horticulture Departments and Markets.

5.1 What way E-Grama Model is Superior System in Economic Development

The present system as explained earlier is of the top-down approach, in most of the cases, there is lack of understanding in the ground truths and the problems of like, what the society needs are not known to the policy-making bodies and also there is no information exchange between the end-user and the policy making and implementation bodies.

Funds allocation and other needs of the village is supposed to be decided in gramasabha meeting, but most of the time this may not take place, only those who have affiliated to a particular group or a political party will get the benefits. This causes imbalance in the development activities and this leads to absence of proper roadmap of the developmental programme.

In the proposed model, there is an in-built local institutional structure. This structure is built with the help of the NGO or with voluntary and interest group of the village. This

will operate and takes care of the action plans regarding the distribution of funds for various programmes for village infrastructure or individual beneficiary.

Gramasabha will decide the needs of the village based on the information available on government web site and interaction with PRI (Panchayath Raj Institutions) and other institutions. The individual needs will be discuss with the expert group available in the model.

Before discussing the advantages of the integrated E-grama model, we will look into some success stories about the usage of ICT in rural India.

6. Success Stories

PANAsia Telecenter and M.S. Swaminathan Research Foundation (MSSRF)³ jointly presented the report in November 1999 with the following facts:

MSSRF has set up the Information Shops in 4 villages to provide E-services to the villagers in various relevant fields, Table.8 shows the potentiality of the information in rural India.

Table 8
Information Shops promoted by MSSRF

Type of use	% of usage
Agricultural and fisheries	5
Educational	12
Employment and training	7
Health	3
Government and entitlements	45
Personal telephone calls	25
Programme related telephone calls	3
	100

The other NGO called FOOD (**Foundation of Occupational Development**) has also carried out the work in creating opportunities for employment and enterprise development on the role of a value-added ISP by establishing electronic networks in remote sites to enable other NGOs and community-based organisations working in remote, rural and tribal areas to network with like-minded organisations within the region and with national and international NGOs and partner organisations.

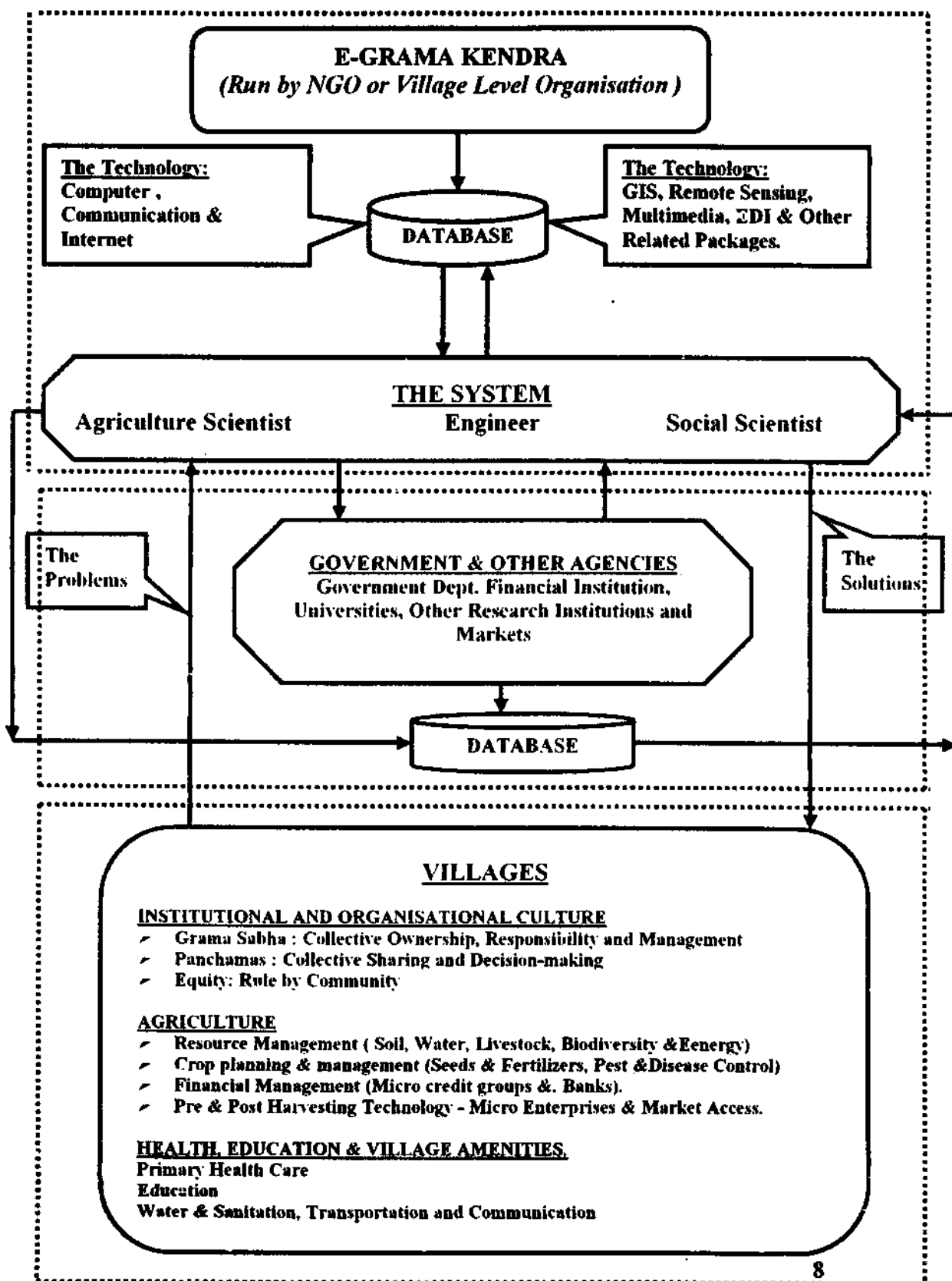
Few worth mentioning areas, it has provided the E-Services to the locals are:

"IndiaShop" an information centre that helps local entrepreneurs for marketing their products by means of E-trading,

Education Software, Internet Kiosk, Herb Gathering and Cultivation and Value Addition Services, etc., are providing the expert opinion and services in the respective areas for their end-users.

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6. Advantages of the Model

This model main approach is people participation and interactive mode of a system. The advantages are rightly matching as mentioned by Peter Oakley et al⁴, and Somesh Kumar⁵ are

6.1 Efficiency

Participation can ensure effective utilisation of available resources and local people participation in the development process leads to cost-effectiveness of the process.

6.2 Effectiveness

People participation can make the process more effective by granting them a say in deciding the objectives and strategies.

6.3 Self-reliance

Many developmental interventions have seen the dependency syndrome. All the local problems, people look to the government for solutions to every problem they face. If the resource, however, both human, material are utilised on the basis of decision taken by themselves will create the self confidence and control of the process.

6.4 Coverage

The most government and many agency-directed or supported interventions reach only limited, and usually privileged people, but participation will cover entire domine of the society.

6.4 Sustainability

Most development interventions are externally funded. Once the support is withdrawn, it fails to sustain to a required level. The involvement of the local people and resources will develop the sense of ownership over the developmental intervention. This is essential for sustainability.

7. Application of the Model: District Administration System and Information Flow, The Present System: A Case of Chikkamagalur District⁶, Karnataka

7.1 Socio Economic Status

Chickmagalur district is situated in the south-western part of Karnataka State. A large area of this district is comprises forest and hilly region and 85% population lives in the rural area.

The district comprises of 7 taluks and 1022 villages. The agriculture economy comprises of Paddy, Coffee, Tea, Spices and other vegetables and plain land crops like oil seeds, cereals and pulses.

At the industry front, the tiny and small scale industrial units existing in the district shows in the year 2001, 43227 tiny and small scale industrial units have been registered with an investment of Rs.59 Crores providing employment opportunity to 17.365 persons. Out of

the 4327 Tiny & SSI units registered, about 19 % of the total industries are wood-based, which occupies the predominant portion, i.e., 835 tiny and small scale wood-based industries have been registered with an investment of Rs. 4 crores providing employment to 2690 person. There are 527 food & agro-based industries in the district with an investment of Rs. 20 crores providing employment to 3173 persons and about 12% of the total industries registered are food & agro-based. It is observed that about 31% of total industries registered are Wood, Agro and Food-based. This is due to the fact that Chikmagalur district is rich in Agriculture, Horticulture and Forest resources. There are 594 tiny units which are engaged in job-working, repairing and servicing. This amounts to 14% of the total units registered. Still there is a very good scope for promotion of such units in all taluks.

7.2 Research Institutes

Central Coffee Research Institute has been recognised as an international centre of excellence for training in coffee culture. Coffee board of India is managing this Institute since 1946. It has collaboration with other coffee institutes of the world, universities in India and abroad.

The Krishi Vignyan Kendra was established in the year 1985. This kendra conducts training courses in the activities like fruits and vegetables preservation, improved method of compost making, vermiculture, preparation of bakery products, mushroom cultivation, nursery raising technique in horticultural crops, sericulture, poultry, dairy, bee-keeping, soft toys, etc.

7.2 Departments

Engineering, Education, Health & Family Welfare, Minor Irrigation, Women & Child Welfare, Watershed Development, Agriculture & Horticulture, Animal Husbandry, Social welfare, Handlooms, Khadi & Village Industry, etc.

Developmental Schemes

Water Supply Schemes, Housing Schemes, Roads and Bridges, School Buildings and Other Programmes like, DPAP, IREP, SGRY and SGSY.

Table 9
PLAN BUDGET FOR 2002-2003

(Rs.Lakhs)

SECTOR	Allocation for 2002-2003			Salary
	State	Central	Total	
General Education	186.30		186.30	100.98
Sports and Youth Services	11.32		11.32	-
Medical and Public Health Services	70.83		70.83	16.19
Indian System of Medicine	15.55		15.55	11.00
Family Welfare Programmes	3.47	342.66	346.13	277.35
Water Supply & Sanitation	167.00	334.10	501.10	
Welfare of SC/ST	110.91	30.65	141.58	18.07
Special Component Plan	89.94	30.00	119.94	
Welfare of Backward Community	24.62		24.62	6.40
Women & Child Welfare	55.66	280.00	335.66	42.42
Nutrition	123.77		123.77	42.42
Agriculture	57.96	21.25	79.21	
Horticulture	21.02		21.02	
Animal Husbandry	36.71		36.71	
Fisheries	16.24	3.00	19.24	
Forest (including Soil Conservation)	67.00		67.00	47.62
Co-operation	5.43		5.43	
Rural Development Programmes	73.33	436.95	510.28	
Rural Employment (Jawahar Rozgar Yojane)	164.20	522.00	686.20	
Other Rural Development Programmes	621.14		621.14	
Minor Irrigation	18.63		18.63	
Village and Small Scale Industries	6.25		6.25	
Sericulture	9.19		9.19	
Roads and Bridges	110.74		110.74	
Tribal Sub-Plan	49.08	42.00	91.08	
Village & Small Scale Industries - Handlooms	4.06		4.06	
Secretariat Economic Services - District Planning Units	2.88		2.88	
Total (Plan)	2123.23	2042.61	4165.84	562.45

Look at the above facts and the district is 4th position in state rank in terms of per capita income of Rs.17609 in 1999-01 This favorable data is not reflecting in economic development, when we look at the spread of Below Poverty Line (BPL) families among the taluks is between 16-35%. It is almost equal to the position of Bidar district, which has a very high number of BPL families. This indicates a lot of imbalance in resources sharing and information flow across the groups.

The other important factor, based on the number of registered tiny and small scale units, the district has very high scope in Wood, Agro and Food-based industries. But much of the above efforts are not translated into economic benefits. The HPC(High Power Committee for Redressal of Regional Imbalances)⁷ constituted by Karnataka Government has also pointed out the growth rate of small scale units is 6.21% much less, when we compare to other districts.

8. Conclusion

8.1 How Chikkamagalur District can Benefit with this Model:

Chikkamagalur district is comprises of forest and hilly region. Mobility is the big problem for the villages of 4 taluks to reach the headquarters. Most of the time beneficiary will not knows about the funds allocation and government benefits as mentioned in Table.9. The beneficiary or the needs of the community can be met through this model. Other than this, farmers can also access their land records, market prices and other related information. Banks, Insurance Companies can access individual member data at E-Grama Center computer to assess the absorption and repayable capacity based on the property owned by the member.

Table.10
Overview World Markets for Organic Food & Beverages
(Estimates)

Countries	Retail Sales (million US\$) 2000	% of Total Food Sales	Expected Growth (medium term)	Retail Sales (million US\$) 2001
Germany	2100-2200	1.6-1.8	10.-15	
U.K.	1100-1200	1.0-2.5	15-20	
Italy	1000-1050	0.9-1.1	10-20	
France	800-850	0.8-1.0	10-15	
Switzerland	450-475	2.0-2.5	10-15	
Denmark	350-375	2.5-3.0	10-15	
Austria	200-225	1.8-2.0	10-15	
Netherlands	275-325	0.9-1.2	10-20	
Sweden	175-225	1.0-1.2	15-20	
Belgium	100-125	0.9-1.1	10-15	
Other Europe	400-600			8500-9000

Total Europe	700-7500			9000-9500
USA	7500-8000	1.5-2.0	20	2500-3000
Japan	2000-2500			
Total	17500			21000

Source: Compiled by ITC, January 2002, based on the trade estimates.

The district is having good potential for agro-based industry, particularly organic products such as flowers, coffee and fruit products. The table provides the potentiality for the organic products but not much support or information is available to export. As like in MSSRF Information Shop, the rural entrepreneurship can be developed by making use of research, and market information from KVK (*Krishi Vigyan Kendra*), Coffee board financial institutions, etc of the district. Presently, these organisations are not directly catering all the users of the district for various reasons. Once all these organization are interconnected by ICT to E-Grama Kendras, end user can avail the service for the economic development.

Acknowledgement: The author would like to thank Prof. S.Chandrashekar, Indian Institute of Management, Bangalore for his invaluable guidance to prepare this paper and also would like to thank all the officers of Zilla Panchayath, Chikkamagalur and Central Coffee Research Institute, who helps in collecting the necessary information.

The views expressed here are the authors own and do not necessarily represent the views of the Indian Institute of Management Bangalore.

Reference:

1. Michael Hammer, Harvard Business Review, Jul/Aug1990, Vol. 68 Issue 4, p104, 9p.
2. Community Knowledge Partnerships Research Programme, M. S. Swaminathan Research Foundation. <http://www.mssrf.org>
3. Success Stories of Rural ICT's In A Developing Country: *Report of the PANAsia Telecenter Learning & Evaluation Group's Mission to India*, involving visits to the Foundation of Occupational Development and the M.S. Swaminathan Research Foundation, November 1999, <http://www.mssrf.org>
4. Peter Oakley et al., *Projects with People- The practice of Participation in rural development*, ILO, Oxford & IBH Publishing Co. Pvt. Ltd., 1991.
5. Somesh Kumar, *Methods for Community Participation- a complete guide for practitioners*, Vistaar Publication, New Delhi, 2002.
6. <http://www.chickmagalur.nic.in/>
7. High Power Committee for Redressal of Regional Imbalances, Government of Karnataka, Final Report, June 2002.