

ENHANCING LEARNING AND INNOVATION AMONG LOCAL COMMUNITIES THROUGH NETWORKS IN POOR RURAL AREAS: THE CASE STUDY OF GMCL, INDIA

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Abstract

In the last few years there have been debates around the roles of the market and the state in order to enhance rural development in poor areas. Two development strategies were assumed to be available: in the first, state agencies could attempt to overcome market neglect by providing financial incentives or infrastructure to attract external firms in the hope that strong market linkages would be consolidated; in the second, a reliance on external agencies would give way to the promotion of locally rooted, indigenous development capabilities. Recently an interest in new development strategies has emerged, centred on local networks of innovation and learning seen as central to any successful form of local development, especially at rural level. This paper aims to contribute to this alternative economic development paradigm through the analysis of a case study from India. GMCL, an enterprise active in the herbal sector, is characterized by a complex and heterogeneous network structure which involves rural communities, local leaders, NGOs, research centres etc. The paper analyses the contribution of this network in terms of learning and innovation and highlights the lessons that could be learnt for its replication in other rural contexts.

Introduction

In an effort to promote local development in poor areas, rural development agencies have traditionally sought to strengthen rural economies using a variety of means. The emphasis was primarily upon the promotion of "exogenous" development wherein new industries and their associated technologies, skills and patterns of working would be imported into rural areas in order to overcome problems of marginality and backwardness. Thus,

development agencies would provide infrastructure improvements and so on, in the hope of attracting leading firms in dynamic sectors. The aim was to integrate poor rural areas into the national and international economy (Bathelt et al., 2004, Cainelli et al., 2006). This approach has been perceived to have a number of weaknesses, most importantly an over-reliance on state support, a dependence on large firms often operating in single-sectors and a consequent marginalisation of small-scale, local enterprises operating in diverse markets (Blakely and Bradshaw, 2002). Such difficulties led to a renewed interest in "endogenous" development wherein local actors are encouraged to take responsibility for the design and execution of development strategies.

Participatory approaches to rural development have thus been emphasised in order to ensure that existing rural resources are put to the best use (Dennis Wei, 2007, Courtney et al., 2007). However, this approach has been criticized due to its tendency to adopt participatory processes either dominated by powerful local actors (so that marginal groups continue to be marginalised) or undermined by local apathy (Doloreux et al., 2004, Grimes, 2003). While both of these options are very much in evidence in mainstream approaches to rural development, there has arisen a general sense of disquiet over the terms of debate, that is, the characterisation of the endogenous and exogenous options as somehow in opposition to one another or as mutually exclusive (Ettlinger, 2003, Douglas, 2005).

Dissatisfaction with such binary thinking has recently led to an interest in a supposed "third" way between state and

market or between endogenous and exogenous strategies (Eraydin, 2001, Hudson, 2005). While the exact nature of this alternative perspective on development is hard to discern, there is widespread agreement that it is concerned with the emergence of new institutional and economic forms, the most notable of which are thought to be networks (Mackenzie, 2004, Herbert-Cheshire and Higgins, 2004). Lee et al. (2004) defines networks as a set of two or more connected business relationships, in which each exchange relation is between business firms that are conceptualized as collective actors. The essence of this definition is the concept of 'collective actor' and consequently the existence of collective actions. This point is also emphasized by authors such as Moseley (2003) and Osborne et al. (2004) who highlight how networks can be thought of as a higher stage of alliances, for in the strategic centre there is a conscious desire to influence and shape the strategies of the partners, and to obtain from partners ideas and influences in return.

Within the networks, people and communities are able to build strong relationships, which over time allow trust, co-operation, and a sense of collective action to develop among members of a network. This is normally defined as "social capital". Concrete personal relationships and networks of these relationships are crucial components in the functioning of an economic system (Johannesson et al., 2002; Westlund and Bolton, 2003). The elements typically identified in the notion of social capital include densely interlocked networks of voluntary relationships; a high degree of reciprocity in which short-term sacrifices are made with the implicit understanding that they will be repaid over time; trust or a willingness to take risks with the conviction that others will respond co-operatively; and broad agreement on social norms (Onyx and Bullen, 2000, Mohan, 2002).

A range of ideas have congregated around the concept of "network" and related terms such as "social capital" and these seem to

promise a move beyond the dualistic forms of thinking that portray development in either "intern" or "extern" terms (Scholz and Stauffacher, 2007, Murdoch, 2000). As sets of relations that can overlap diverse spaces, networks hold the promise of a more complex appreciation of development than has traditionally been evident in state-centred versus market-led or endogenous versus exogenous models.

However, it is frequently unclear just what relevance such notions have for the study of *rural* networks.

The contemporary focus upon networking capacities highlights the possible link between network and enhanced capacity of local actors to *innovate*, rather than simply participate in the place of innovation (Mueller and Thomas, 2000). Learning involves the transfer of knowledge among different organizational units. Such knowledge transfer occurs in a shared social context in which different units are linked to one another. According to Mubangizi (2003), organizations are embedded in a network co-ordinated through processes of knowledge transfer and resource sharing. Such a network enables them to gain critical competencies that could possibly contribute to their competitiveness in the marketplace (Tsai, 2000, Petrou et al., 2007).

Because the networks of learning and innovation imply a degree of joint working between local actors and organisations, it is argued that spatial proximity is important (Sorensen, 2000, Lee et al., 2004). Commentators are constantly looking for examples of innovative network clusters where mutual knowledge, collaboration and the exchange of information are facilitated and where trust and mutual respect are fostered (Woodhouse, 2006). Attention is drawn to economic associations and networks and the way these facilitate learning and innovation (see Woodhouse, 2004, Svendsen, 2000).

Yet, while a great deal of attention has been given to studying the spatial distribution of clusters and districts in

urban areas, rather less has been focused on rural places (Reardon et al. 2001). Questions remain over the feasibility of this approach in areas that have been progressively weakened by patterns of development. (e.g. Bristow, 2000).

This paper seeks to address this gap by presenting the case study of Gram Mooligai Limited (GMCL), an Indian enterprise active in a rural area characterized by a complex and heterogeneous network structure involving local communities in 72 villages, leaders, NGOs, research centres etc. GMCL is the first enterprise active in the herbal sector in India whose shareholders are local communities regrouped in village organizations called *Sanghas*. These latter, in a network with other organizations, have combined scientific knowledge with their own in order to generate innovations in their local practices. The innovation described here consists in the capacity of local stakeholders to create novel knowledge in ethno medicine which could enhance better socioeconomic development, local health practices and medicinal plant conservation. The paper seeks to analyse the organizational peculiarities of this network of local actors, its functioning mechanisms and its outcomes in terms of learning and innovation capacity, providing some conclusive recommendations for its replication in other poor rural areas.

The study case: GMCL (Gram Mooligai Company Limited)

GMCL (*Gram Mooligai Company*) is an Indian enterprise active in the herbal sector since 2000, established by a network of Indian NGOs. In particular, CCD (Covenant Centre for Development), an NGO based in Madurai (Tamil Nadu) and FRLHT (Foundation for the Revitalization of Local Health Traditions), a think-thank in Bangalore (Karnataka) have played a relevant role in the set up of this initiative.

GMCL supplies medicinal herbs to Indian pharmaceutical enterprises (Himalaya Drug Company, Natural Remedies,

Ompharma etc.), playing an intermediary role between these companies and local farmers. Another key activity of GMCL is the production and commercialisation of phyto-medicines which are produced by local communities using their knowledge of ethno-medicine.

The herb gatherers and farmers involved with GMCL belong mainly to *scheduled tribes* such as the *Servar*, *Konar*, *Rettiyan* and *Naiyakkar*. These are predominantly landless. Only a few of them possess land with an average size which varies between 2 and 5 acres. The major source of income comes from the work of the male members. The interviews show that the majority of the members' spouses were working as labourers either in agriculture or in construction work. The proportion of members whose monthly family incomes were less than Rs 2,000 came to less than one third, an indication that this agency catered primarily to the needs of the poor. Although GMCL has been created quite recently, it shows a good potential in financial terms having a turnover which shifted from \$140,000 in 2005-2006 to \$180,000 in 2007. While it is still financially small, it contributes an average of \$390 annually to the livelihoods of some 1300 families in Karnataka and Tamil Nadu.

Methodology

The field study took place in southern India, Tamil Nadu State, in the districts of Dindugal, Virudhanagar Ramanad between June-September 2008. Data comes from individual and group interviews.

The first dataset consisted of individual interviews with a sample of 12 informants working at different levels of GMCL, including board members, employees and middle management. The director of CCD, 5 field workers and 4 field co-ordinators were interviewed. These in-depth interviews last from 1 hour to 90 minutes and focused on the main characteristics and outcomes of this partnership initiative in terms of creation and diffusion of ethno medicine innovation, the contribution of different

partners of the network and present and future challenges in the implementation and development of this initiative.

The second dataset consisted of individual interviews with 35 members of *Sanghas* and 15 members of other village organizations (*Kalasam*, *MahaKalasam*) involved in the initiative. To select a representative sample of the village, parameters such as age, caste and economic conditions were taken into account. The interviews had structured and semi-structured components. The villagers were selected using a snow-ball technique. In order to reduce the pitfalls associated with this kind of sampling, the latter was matched with a sample of randomly selected villagers taking part in the village organizations.

The topics of these interviews were centred on the role of local institutions, the interrelations between village organisations and the other partners of the network in the light of the increase of the ethno medicine capacity creation and diffusion. The interviews also explored members' opinions on issues such as strengths and weaknesses of the network organizational structure of GMCL and its future challenges.

In an attempt to compensate for the lack of cultural and linguistic background that can only come from long-term engagement with a particular community, four local translators belonging to the same caste of the interviewees were hired. Two of them, recruited with the support of CCD, were field workers with previous professional experience among Tamil speaking villagers. Aware of the fact that translation from different backgrounds may help facilitate access to different social groups, two English speaking villagers were also recruited. To protect the privacy of the respondents, we ensured that interpreters lived in different villages from the interviewees. All the interviews were recorded and transcribed in Tamil and subsequently translated into English and the two versions compared in order to triangulate the data..

The Sanghas: the base of GMCL

GMCL is an attempt to develop participatory management for villagers as the shareholding of the company is represented by the cultivators and gatherers of medicinal plants who are organised into 72 local groups called *Sanghas*¹, distributed in 66 villages in Karnataka and Tamil Nadu. They co-ordinate basic activities at grass-roots level such as collection of medicinal plants, processing of raw material, commercialization of final products etc.

The *Sanghas* are village organizations composed of between 10 and 15 members. This limited number was established to facilitate interaction between members and the functioning mechanisms. The members are all women, since the activity of gathering is predominantly undertaken by the women and belong to the scheduled tribes, that is to say the most vulnerable community members.

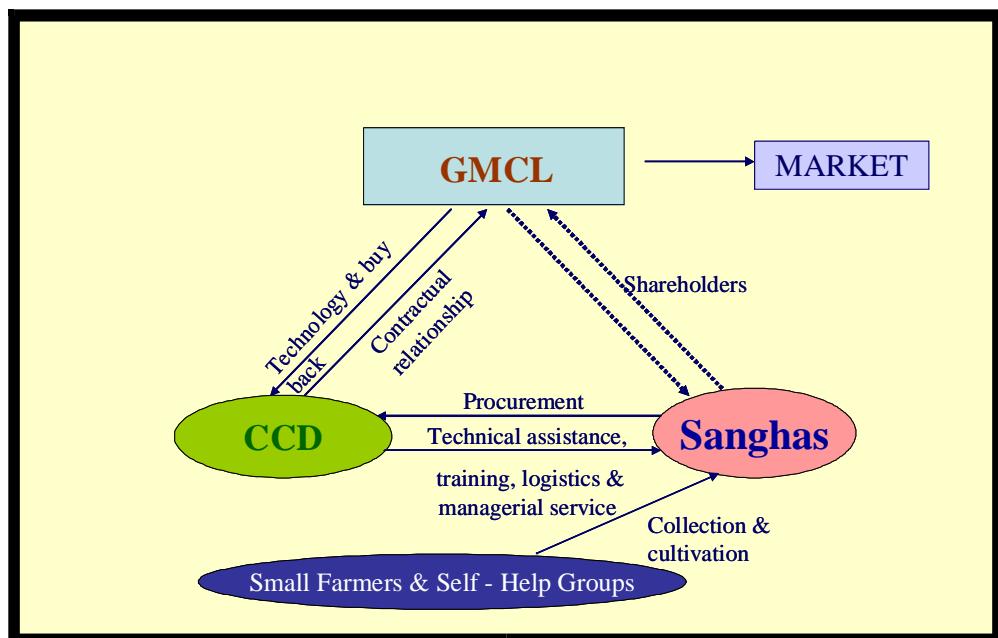
GMCL presents a formally established and agreed decision-making structure where all the issues connected with the running of the enterprise (such as raw material supplies and prices, technical and managerial problems, wage levels etc.) are discussed at regular meetings of an elected board of directors composed of both managers and representatives of *Sanghas*. These latter are elected from among the members of the *Sanghas*. GMCL plays the role of a marketing/commercial entity. Its main functions are liaising, selling the raw material and negotiating commercial conditions with the pharmaceutical sector and expanding the market share for the final product. The direct control exercised by member users at grass roots level as part of the governance structure is crucial in order to ensure that member interests are taken into account. This enhances the participation at grass roots level and

¹ "Sangha" is a Sanskrit word that can be translated roughly as "association" or "assembly" "company" or "community" with common goal, vision or purpose.

democratic processes inside the organisation.

Another element in the structure of GMCL is that the cultivators and gatherers of medicinal plants represent the main shareholders of the company. This not only represents a positive financial aspect for the villagers, who can receive dividends, but it may also increase their sense of ownership (Bendick and Egan, 1995) thereby enhancing their interest in

taking part. Building such effective and innovative forms of community involvement in decision-making is one of the major challenges of any form of local development (Hickman, P. and Slocombe, 2003).



CCD (Covenant Centre for Development), a local non-governmental organization (NGO) based in Madurai (Tamil Nadu) links GMCL with the local communities, thus playing a role of facilitator and action catalyst.

When GMCL gets an order from a buyer, it offers to buy the specified medicinal herbs from the members of the group at 70% of the negotiated price value of the buyer industry and requests the *Sanghas* to send samples of material to be collected, in case the groups are willing to accept the offer. GMCL offers to buy the produce at a predetermined price at the time of the harvest, subject to quality and quantity conditions.

This aspect is significant as the herbal market is characterized by price fluctuations and instability, due to the seasonality of the supply. The villagers benefit from an assurance that the quantity they procure will be purchased at an agreed price. The *Sanghas* send the samples of the materials to be collected to the buyer through the GMCL. When the buyer accepts the sample, GMCL places orders to the *Sanghas* specifying quantity, quality, packing style and transportation. The transportation costs are shared between the members of the *Sanghas* in proportion to the quantity produced or gathered. In this way, the criterion of equity is kept. The procedure for sharing benefits is considered by the members of the *Sanghas* to be smooth and transparent, thus reducing internal conflicts.

Twenty-four out of thirty-five members of the *Sanghas* affirmed that the procedure for sharing benefits was constantly monitored by members in conjunction with the field workers of CCD. Although some conflicts could arise, especially in the initial phase of a constitution of a *Sangha*, the socio-economic uniformity of the members, all landless labourers belonging to the *scheduled tribes*, represents important elements for the creation of cohesion inside the group and the reduction of exclusion mechanisms.

Interaction mechanisms between the different sub-entities of the organization

Interaction between the upper (GMCL) and the lower (*Sanghas*) strata of the organization is ensured by the presence of the chief co-ordinator and sub-field co-ordinators of CCD. They interact

with representatives of the *Sanghas*. Regular meetings are organized between sub-field co-ordinators and *Sangha* representatives. Almost the totality of the villagers (forty-two out of fifty) emphasized the importance of these meetings for the sharing of information and the involvement of villagers.

The primary functions of field co-ordinators consist of providing information, support and guidance to the *Sanghas* when required, and acting as a link between village level activities and upper strata of the organization. Linkages are also maintained between *Sanghas* and GMCL through an annual meeting where all *Sanghas* are invited to the general assembly where the results of the past year and plans for the forthcoming year are discussed. Emphasis is given to the difficulties and challenges faced and solutions are formulated on a collective basis, following the Gandhian vision of village *Swaraj* (self-governance) which sees the village as the primary unit of democracy and community participation in the decision-making process. This contributes to filling the information gap and also to maintaining the sense of ownership and participation alive among the villagers. A member of a *Sangha* affirmed: *"It is very important to participate in the annual meeting of the Sanghas. On this occasion we can meet other members of the Sanghas from the other villages and exchange information and advice. We can discuss with the members of GMCL the problems we all faced, trying to find solutions on a common basis"*.

Onyx and Bullen (2000) stress the importance of the level of communication existing within the organization to support participation and internal democracy. When information is spread during such public meetings within the village, the risks of marginalization of some groups decrease as each member can be properly informed. Rajapandhy, the managing director of GMCL affirms: *"We try to involve the villagers in decision making as much as possible, so that they can see what the results are"*.

A weak point is that up to now, there is no village organization that liaises directly with GMCL. The existence of a leasing organization would allow an increase in the interaction between the upper and lower strata of GMCL and an improved

communication and diffusion of information between different stakeholders.

It is planned that the community enterprise venture will spin off into an independent unit as a federation that will handle all the operations in its name – the Medicinal Plants Collectors and Cultivators Federation (MSMSSK). The MSMSSK will promote co-ordinated action in the local herbal enterprise industry to lobby for improved practices and will:

- i. Orient gatherers towards good collection practices and the benefits of better quality and higher prices
- ii. Orient cultivators towards good agricultural practices such as intercropping and organic inputs
- iii. Favour dialogue among stakeholders to enhance co-operation
- iv. Orient stakeholders on emerging industrial trends

Currently, this role is partly played by CCD but the constitution of an *ad hoc* organization would increase the effectiveness of the model in accomplishing the aforementioned functions. The functions of orientation, lobbying and dialogue promotion among different stakeholders are important in enhancing the chances of success for an enterprise such as GMCL. The GMCL model is capable of adapting itself to its external environment through an evolution of its structure. This adaptation is important in order to respond more effectively to the challenges of the sector in which the enterprise operates. We can affirm that GMCL could represent an example of a reflexive organization (Robbins, 2001).

The network structure of GMCL

GMCL is characterized by a network structure at external and internal levels. This network, formed by different organizations, includes several NGOs, think-tanks and research centres, as well as local village organizations (*Kalasams* and *Mahakalasams*).

External network

The organizations who have played an important role in the development and success of the GMCL model are the Foundation for the Revitalization of Local Health Traditions (FRLHT) and CCD, in Tamil Nadu (Madurai city).

The role of CCD

A facilitator has been defined by Schuman (2005) as “one who contributes structure and process to interactions so groups are able to function effectively and make effective decisions.”

In the case of CCD, the role of facilitator is complex and involves an *organizational* dimension, in terms of facilitation in *Sanghas* constitution and operational co-ordination, and a *communication/liaising* dimension, which consists of facilitation in the flux of information between the different levels of the organization.

At first, CCD involvement in GMCL activity implies the identification of villagers who are willing to take up medicinal plants cultivation and collection. They are targeted on the basis of their socio-economic condition. As the main objective of GMCL is to enhance the livelihood of the rural poor, the selection of beneficiaries takes this aspect into account. This phase of approaching and explaining to villagers the advantages of taking part in GMCL is sometimes long and not always easy. According to some field co-ordinators, several months and frequent visits are necessary in order to gain the trust of villagers and foster their interest. Most of the time, villagers associate medicinal herbs with the exploitation and low income, due to past negative experiences with traders so the sale of herbs is associated with price fluctuations and instability in income.

Before the constitution of a *Sangha*, the field co-ordinator explains the conditions that are part of the agreement with GMCL. Once the villagers agree to be involved in GMCL, the *Sanghas* are established. Initial training and guidance is given about the operational, administrative and legal procedures involved with the formation and functioning of the *Sangha*. These procedures are varied and concern soil analysis, sustainable cultivation, quality checking, costs of inputs, preparation of periodic reports and time-activity and progress charts.

The *Sangha* under the facilitation of CCD makes a procurement potential assessment survey every year in a fixed month to assess its own supplying capacity for each medicinal plant species through participating group members and gets a consolidated procurement potential assessment for the year. Periodic field visits are made to ensure the

adherence of suggested farming measures by members.

The role of FRLHT

“Ethno-medicine capacity” is originated by interactions between the scientists of FRLHT, the members of CCD and the villagers, in particular the folk healers. This involves research and action and the documentation, research and conservation of medicinal plants and the dissemination and increase of awareness among villagers on traditional practices and uses of ethno-medicine.

FRLHT and CCD's involvement with documenting medicinal plants began in 1994 with recording the *naattu vaidhyar's* (traditional folk healers) information, their health practices, remedies and local species of medicinal plants used for preparing their cures. The pharmacopeian standards for 61 plants have been documented with the help of local folk healers and a report has been prepared on the simple formulations for Primary Health Care, providing a potential for this cataloguing to be useful at both global and local level. .

Another step in the process of “ethno-medicine” capacity creation is represented by the processes of standardization² of extracts of plants developed by FRLHT in conjunction with the folkhealers using modern techniques and models; currently the golden scientific standard being that of randomized clinical trials. The latter are being reassessed and ‘indigenized’ in their off shoring (Petryna 2007) yet still following strict scientific standards.

The natural next step of this process of knowledge acquisition through documentation and research is the sharing of such knowledge with the immediate concerned groups, the local villages and their local institutions (*Kalasams and Mahakalasam*). FRLHT specializes in developing need-based training courses and educational events that serve as supportive means in the process of the conservation and revitalization of the Indian medical heritage. In this process we find innovation, both in ‘new’

² In herbal medicine *standardization* refers to providing processed plant material that meets a specified concentration of a specific “marker” (that is to say a substance used as an indicator of a biologic state) constituent.

knowledge that is created from this encounter and documenting process and in linking knowledge with a cultural identity or struggle. To educate villagers and increase their knowledge of medicinal plants and traditional health practices, a Medicinal Plants Conservation Park (MPCP) has been developed by CCD in Madurai district in Sevayoor³ campus. The park consists of an Ethno-Medicine Forest (EMF) spread over 33 acres with over 500 plant species.

The training programmes organized by FRLHT help local villagers to recognize and value their local knowledge of medicinal plants, resulting in an increased capacity to study, document and monitor traditional knowledge on medicinal plants and their use, make an inventory of medicinal plants and local biodiversity through biodiversity registers etc.. Twenty seven out of thirty-five members of the Sanghas highlighted how their active participation in the GMCL initiative helped them to improve their knowledge of local plants and their medicinal uses. Thirty out of thirty-five affirmed a positive shift in the perceptions of traditional medicine by attributing an increased importance to it. These positive outcomes have been repeatedly emphasised by thirty-seven out of fifty villagers interviewed in Sevayor who saw in the training activities an important means to value their local resources and their ethno-botanical knowledge.

Here the key role of the network in a rural context becomes evident as local resources are revitalized by attributing value to local knowledge with the objective of sustaining local development.

An increased awareness of the importance of phyto-medicine as an alternative way to cure themselves and rural people has also been observed. A member of a Sangha in the village of Umlallinat declared “*I am associated with GMCL because I want to popularize our own medicine. Natural medicine which uses plants does not have many side effects. What is happening nowadays is that*

³ Sevayoor in Tamil means ‘Place of Service’. This place was named such, also because of the long-standing inspiration of the founding team of CCD to build a rural community centre, where local resources and traditional skills will give the solutions to all the needs of the community, as well as the neighbourhood.

because we use allopathic medicines, we are inviting hundreds of other diseases while treating one disease. Now, by marketing our products, we are able to give a new lease of life to our ancient medical system and are able to popularize it. Since this system is a part of our national heritage, we need to respect it and popularize it. Our effects are geared in this direction. As we know, this system developed in our villages. Hence, we should teach our villagers that by adopting this system, they can make use of natural resources available in their own environment and get rid of their diseases without side effects".

Nevertheless, it is important to point out how effective approaches to capacity development go beyond one-off technical courses or "how-to" training to allow members of the *Sanghas* to express their creativity and entrepreneurial ability and to provide opportunities to develop adaptive skills. The action of facilitating organizations, such as CCD should be focused on strengthening connections between local groups as part of building social capacity. Its efforts can range from creating informal forums for information exchange or more formal committees of village representatives to actively supporting the efforts of grassroots organizations to form networks or federations on their own.

Internal network

The GMCL model is rooted in the *village network structure* already existing at local level in the form of '*Kalasams*', '*Mahakalasams*', that are village micro-credit organizations previously created with the support of CCD. This integration with *Sanghas* increases the synergy between them and represents a distinctive element of GMCL's model. In the phase which preceded the constitution of GMCL, CCD and *Mahakalasam*, mobilized the share capital necessary for the creation of the enterprise and carried out market surveys and groundwork studies regarding the local medicinal plants sector.

The role of the *Kalasams* has increased in the last few years as since 2004 the scope of GMCL activity does not just involve gatherers from *Sanghas* but also members of *Kalasams* and *Mahakalasams*. This contribution has consisted in marketing semi processed products produced by local medicinal

plants through *Kalasam* members. The *Mahakalasam* has assisted GMCL on the constitution of a Processing Unit (SPU) to produce medicinal plants products at local level (close to Sevayoor village). The members of *Mahakalasam* undertook the initial market survey before setting up the unit, assessing the potential market by surveying diseases that occur according to seasons and local cures used besides the scope for the herbal medicines that could have been prepared by the processing unit.

This contribution of *Kalasam* groups in GMCL initiatives has also assumed a financial dimension. Fifteen *Kalasams* have invested Rs. 5000 each and become partners in profit with GMCL in the SPU endeavour. In the future a further financial involvement could be done through the purchase of shares. This would allow a strengthening of the strategic linkages between the different local institutions and the reinforcement of the GMCL structure as a whole.

Social exchanges within the *Sanghas* and these village organizations allow a transfer of information and knowledge (Ahuja, 2000) and increase the social capital (Onyx and Bullen, 2000). Two third of the members of the *Sanghas* interviewed emphasised how the existence of previous village organizations allowed them to benefit from different village-centered services such as credit, training etc. However, one wonders to what extent the social stratification in the villages, which is linked to caste and socio-economic background, may hinder the full access to these services.

Discussion and analysis

In the section below some key features that emerge from the case study in order to promote successful innovation and learning processes and enhancement of innovation capacity in a local network are identified.

Linking local actors at several levels in the rural context

The importance of the rural network as an instrument to enhance the performance of the organizations has been already emphasized in literature (Carley, 2003). Some authors have underlined the capacity of a network to have an increased and diversified set of resources available

and to be more responsive to the external environment and the changes it undergoes.

The GMCL model can provide a valuable lesson as it shows the importance of adopting a multilayered network structure at rural level which involves a diversity of stakeholders in a community-based organization. One of the interesting aspects of this case study has been the way this programme has built up a variety of partnerships and networks outside and at village level, creating new 'global assemblages', to borrow a concept introduced by Ong and Collier (2007). These have occurred in a variety of ways and across different types of stakeholder groups. For example, in the field, village community organizations such as Kalasams, Mahakalasams and Sanghas, NGOs and training centres now have extensive cross-linkages that are both formal and informal. Because these are now extensive, it is likely that considerable trust has been built up where little existed before. As GMCL shows, a network constituted by heterogeneous organizations is able to gain specific comparative advantages which allow it to enhance the performance of a community-based enterprise.

Another strength and peculiarity which could be adopted in other network structures operating in similar rural contexts is its capacity to create synergies not just with outsider organizations but also within the village network organization structure. Community assemblies have been one of the most important mechanisms available for community planning, for dealing with power imbalances and conflict, for achieving accountability and for strengthening local organization (Onyx and Bullen, 2000). This multidimensional interaction and co-operation between endogenous and exogenous organizations can be valuable in reinforcing their linkages with mainstream institutions, enhancing their opportunities and innovation and funding better and more effective ways of supporting local resources and skills.

The GMCL approach shows the importance of an enterprise to reinforce its network structure. Horizontal linkages—those between local organizations—enhance the capacity of grassroots organizations for collective action and increase the sustainability and scalability of local development efforts (Dasgupta, 2000). The integration between

Sanghas and other micro credit groups helped the Sanghas to support local resources and skills and enhance social innovation.

Capacity building and human capital development

The training organized by FRLHT and CCD was a prerequisite for the creation and diffusion of ethno-medicine capacity and its enhancement. On the occasion of programs such as local healers' conventions and village botanists' workshops, local communities learned new skills of identification, herbarium preparation and new uses of medicinal plants. This helped them to recognise and value local knowledge of medicinal plants' use and conservation. The final result has been the shift from a form of *individual* knowledge, mainly possessed by folk healers, towards a form of *collective* knowledge, more diffused at community level. As capacity-building is rooted in the recognition of community capacities and institutions, it can lead to an increased emphasis on partnership with other stakeholders. This is important in order to increase the effectiveness of the community role in using their traditional knowledge for their own benefit and the sustainability of community initiatives. The enhancement of ethno-medicine capacity in the network through a process of capacity building could actively enhance the *protection* of traditional knowledge from the risk of misappropriation from outsiders as training increases the capacity of local communities to assess and evaluate their resources and to generate biological databases.

Social capital and collective action underpin knowledge sharing and learning processes

In the GMCL case study social learning through capacity-building has also been an effective strategy to bridge the technical and managerial capabilities of the villagers and enhance their self-confidence. Classes and discussions at community level, organised by resource persons and field workers directly to Sanghas members, have helped to raise their levels of information, awareness and knowledge. As the field data show, the degree of success varies from village to village and depends on the type of training, number of training sessions attended and quality of training.

The fact that these village organizations are created on the basis of collectively owned social endowment, facilitates solidarity among community members and receptivity to collective action. This is well captured by a member who states: "*Being a member of the Sangha is like being in my maternal home*". Social linkages can become the basis for a new enterprise; but, conversely, the presence of an enterprise can strengthen or create these social ties. The *Sangha*, being a grass-root organization, encourages the villagers to come together which could encourage them to analyse their issues and problems and fulfil their needs in a participatory way. The limited number of members and the homogeneity of their background helped minimize conflicts and discriminatory practices and enhanced social capital within these local organizations.

It is important to point out how caste could become a barrier in the implementation of an entrepreneurial activity at community level. This aspect is delicate and deserves particular attention as it could accentuate social discrimination and undermine in the long term the effective participation of all members of the community. Ten of the villagers interviewed, especially the poorer ones, have emphasized how low caste and social status may inhibit entry into entrepreneurial occupations, reducing the range of activities open to poor women and limiting their economic activities. Among these village communities herb gathering is associated with a low caste and tribal background, and represents a social stigma. In Thimmapuram only four villagers are engaged in collecting herbs. Although CCD informed the villagers of the possible economic returns of this activity, none of them has shown any interest in taking part.

One can also question the possibility of local elites monopolizing much of the trade of medicinal products, also possibly through GMCL. This phenomenon is likely to be associated with the caste system. This issue of "elite capture" on conservation and development projects is well known (Agrawal, 1999). Even though it was not the primary objective of this paper to examine the possible monopolization of the herbal market by outsiders such as local traders, this issue deserves further investigation.

Conclusion

GMCL shows the importance of adopting a multilayered network structure which involves a diversity of stakeholders, in particular the community in overall governance, helping foster social capital at community level and the learning of social skills, thus maximizing the impact and community outreach.

The network approach followed by GMCL was useful as it linked development issues internal to poor rural areas with commercial opportunities that are external. This case study also shows the complex, multifaceted nature of rural development and the way that any response to rural development problems (whether from a network standpoint or not) must be alert to local peculiarities and complexities.

It is important to point out how, despite their advantages, rural networks could suffer weaknesses, including lack of resources and connections that limit their ability to grow and connect to markets and a lack of inclusiveness of poor, women or other socially marginalized groups. The challenge is to work closely with local organizations to capitalize on their strengths and facilitate a transformation from within that allows them to become more inclusive. Support organizations such as CCD can be important contributors to this.

There is considerable scope for further work to explore origins, evolution and effects of networks in poor rural areas and to expand the understanding of these and other factors connected with the formation, evolution and performance of this form of partnership. The conditions that could give rise to successful networks in poor rural areas need to be further distinguished, and the relevance of their differences in other socio-economic and geographical contexts considered.

The question of how the market, NGOs and other corporate bodies may interact with rural networks to support their operation is worthy of investigation. Research that helps us understand how rural networks may work collaboratively with one another is also needed.

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